DSC-S85

SERVICE MANUAL

Level 1

Self Diagnosis Supported model

AEP Model
UK Model

Ver 1.0 2001. 06

Cyber-shot
Digital Still Camera

InfoLITHIUM M

MEMORY STICK

Differences Manual

This Service Manual covers only differences from DSC-S75 (Level 1).
In performing repair, refer to DSC-S75 Service Manual (Level 1) (9-929-891-41) as well as this manual.

- **Main differences:**
  CCD imager changed
  (3.4 M pixels → 4.0 M pixels)

(SEE PAGE □□): Pages on the original service manual.
<SEE PAGE □□>: Pages on this service manual.
☞ : Points added parts.
☛ : Points deleted parts.
☛ : Points changed parts.

DIGITAL STILL CAMERA

SONY®

SPECIFICATIONS

System

Image device
8.98 mm (1/1.8 type)
color CCD

Lens
3x zoom lens
f = 7 – 21 mm (9/32 – 27/32 inches)
(34 – 102 mm (1 3/8 – 4 1/8 inches) when converted into a 35 mm still camera)
F = 2.0 – 2.5

Exposure control
Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data system
Movie: MPEG1
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG1 (Monaural)

Recording medium
"Memory Stick"

Flash
Recommended recording distance (ISO is set to AUTO): 0.3 m to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches)

Output connector

A/V OUT (Monaural)
Minijack
Video: 1 Vp-p, 75 Ω unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

USB jack
mini-B

External flash jack
Minijack

LCD screen

Used LCD panel
4.6 cm (1.8 type) TFT (Thin Film Transistor active matrix) drive

Total number of dots
123 200 (560×220) dots

General

Used battery pack
NP-FM50

Power requirements
7.2 V

Power consumption (during recording)
3.0 W

Operation temperature
0°C to 40°C
(32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
117×71×64 mm
(4 5/8×2 7/8×2 5/8 inches)
(w/h/d)

Mass
Approx. 462 g (1 lb)
(including battery pack NP-FM50, "Memory Stick," shoulder strap and lens cap etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/B/C AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operation temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
125×39×62 mm
(5×1 9/16×2 1/2 inches)
(w/h/d)

Mass
Approx. 280 g (10 oz)

NP-FM50 battery pack

Used battery
Lithium ion battery

Maximum voltage
DC 8.4 V

Nominal voltage
DC 7.2 V

Capacity
8.5 Wh (1 180 mAh)

Accessories

A/V connecting cable (1)
NP-FM50 battery pack (1)
AC-L10A AC power adaptor (1)
Power cord (1)
USB cable (1)
Lens cap (1)
Lens cap strap (1)
Shoulder strap (1)
"Memory Stick" (16 MB) (1)
CD-ROM (USB driver SPVD-004) (1)
Operating Instructions (1)

Design and specifications are subject to change without notice.

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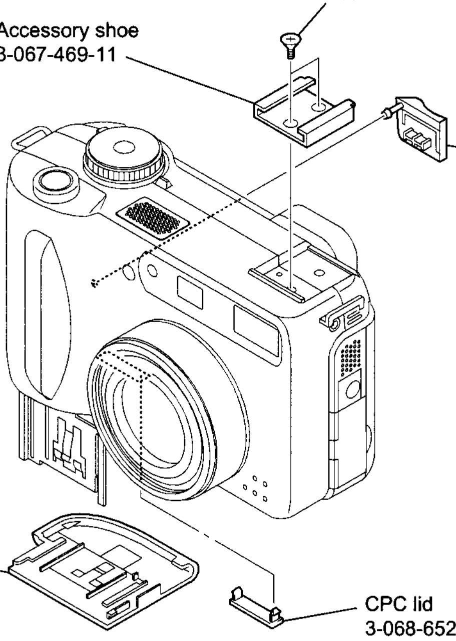
1. MAIN PARTS

Note:

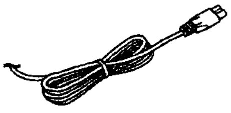
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The parts numbers of such as a cabinet are also appeared in this section. Refer to the parts number mentioned below the name of parts to order.

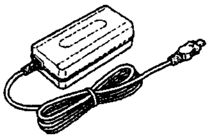
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

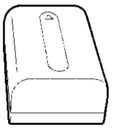
1. ORNAMENTAL PARTS

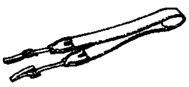

Interior lock process (M2)
3-069-159-11
Accessory shoe
3-067-469-11
DC (IN) cover
3-068-654-11
(When change it, need to dismantle the set.)
Battery lid
3-068-640-11
CPC lid
3-068-652-01

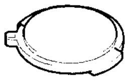
Checking supplied accessories.

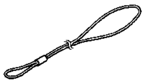

Power cord (1)
⚠ 1-769-608-11 (AEP)
⚠ 1-783-374-11 (UK)


AC power adaptor
AC-L10A (1)
⚠ 1-475-599-11


Battery pack
NP-FM50 (1)

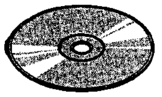

Shoulder strap (1)
3-987-015-01

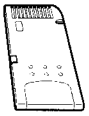

Lens cap (1)
X-3951-672-1

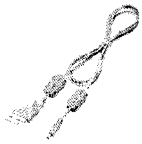

Lens cap strap (1)
3-067-797-01

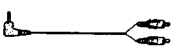
Other accessories

3-068-188-11	MANUAL, INSTRUCTION (ENGLISH)
3-068-188-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (AEP)
3-068-188-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP)
3-068-188-41	MANUAL, INSTRUCTION (ITALIAN, DUTCH) (AEP)
3-068-188-61	MANUAL, INSTRUCTION (SWEDISH, RUSSIAN) (AEP)


CD-ROM
(SPVD-004 USB driver) (1)
3-006-676-01


"Memory Stick"
(16 MB) (1)


USB cable (1)
1-757-293-11


A/V connecting cable (1)
1-783-738-11

3. REPAIR PARTS LIST

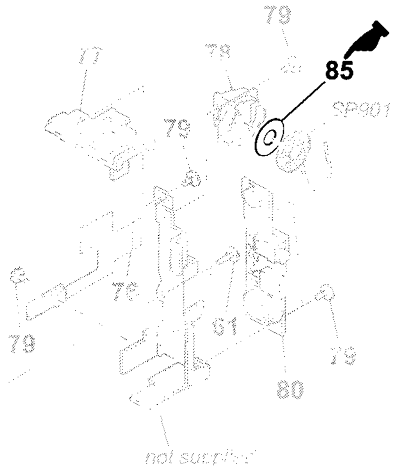
3-1. EXPLODED VIEWS

3-1-1. MAIN SECTION
(Service manual page 9)

DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-069-158-01	PROCESS, (M2) INTERIOR LOCK		1	3-719-381-01	SCREW (M2X4)	
2	3-069-159-01	PROCESS, (M2) INTERIOR LOCK		2	3-069-159-11	PROCESS, (M2) INTERIOR LOCK	
3	X-3951-668-1	HOLDER ASSY, BATTERY		3	X-3951-783-1	HOLDER ASSY, BATTERY	
4	3-068-640-01	LID, BATTERY		4	3-068-640-11	LID, BATTERY	

3-1-2. CABINET (FRONT) BLOCK ASSEMBLY
(Service manual page 10)

☛ : Points deleted portion.



DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-068-605-01	SCREW, FILTER		51	3-068-605-11	SCREW, FILTER	
54	3-068-608-01	GRIP		54	3-068-608-11	GRIP	
55	3-068-603-01	COVER, CABINET (FRONT)		55	3-068-603-11	COVER, CABINET (FRONT)	
56	X-3951-665-1	CABINET (FRONT) ASSY		56	X-3951-781-1	CABINET (FRONT) ASSY	
57	3-068-688-01	RETAINER, COVER SHAFT		57	3-068-688-11	RETAINER, COVER SHAFT	
58	3-068-611-01	COVER, JACK		58	3-068-611-11	COVER, JACK	
63	3-069-158-11	PROCESS, (M2) INTERIOR LOCK		63	3-719-381-01	SCREW (M2X4)	
64	1-476-666-11	SWITCH BLOCK, CONTROL (MODE)		64	1-476-666-21	SWITCH BLOCK, CONTROL (MODE)	
65	X-3951-667-1	CABINET ASSY, UPPER		65	X-3951-782-1	CABINET ASSY, UPPER	
68	X-3951-670-1	GRILLE ASSY, MICROPHONE		68	X-3951-784-1	GRILLE ASSY, MICROPHONE	
70	3-069-159-01	PROCESS, (M2) INTERIOR LOCK		70	3-069-159-11	PROCESS, (M2) INTERIOR LOCK	
85	3-069-404-01	SPACER, SP					

3-1-4. CABINET (REAR) BLOCK ASSEMBLY
(Service manual page 12)

DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
157	X-3951-671-1	CABINET (REAR) ASSY		157	X-3951-785-1	CABINET (REAR) ASSY	
160	3-068-654-01	COVER, DC (IN)		160	3-068-654-11	COVER, DC (IN)	

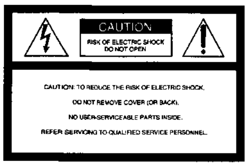
4. GENERAL

This section is extracted from instruction manual.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For the Customers in the U.S.A.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Never expose the battery pack to temperature above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

If you have any questions about this product, you may call:
Sony Customer Information Services Center
1-800-222-SONY (7669)

The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity

Trade Name: SONY
Model No.: DSC-S75
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road, Oradell, NJ 07649 USA
Telephone No.: 201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Trade Name: SONY
Model No.: DSC-S85
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road, Oradell, NJ 07649 USA
Telephone No.: 201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the Customers in the U.S.A.

DISPOSAL OF LITHIUM ION BATTERY.

LITHIUM ION BATTERY.

DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center.

Note:

In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)

Caution:

Do not handle damaged or leaking lithium ion battery.

Notice for the Customers in the United Kingdom

A moulded plug complying with B51363 is fitted to this equipment for your safety and convenience.
Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS1362, (i.e., marked with ◈ or ♡ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the cover, please contact your nearest Sony service station.

For the Customers in Germany

Directive:EMC Directive 89/336/EEC, 92/31/EEC
This equipment complies with the EMC regulations when used under the following circumstances:
- Residential area
- Business district
- Light-industry district

(This equipment complies with the EMC standard regulations EN55022 Class B.)

Attention for the Customers in Europe

This product has been tested and found compliant with the limits sets out on the EMC Directive for using connection cables shorter than 3 meters.

The electromagnetic fields at the specific frequencies may influence the picture and sound of this camera.

"Memory Stick" and battery pack

For the Customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

"Memory Stick"

CE N50

For the Customers in the U.S.A. and Canada

THIS CLASS B DIGITAL DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND THE CANADIAN ICES-003 OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

Be sure to read the following before using your camera

Trial recording

Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording

Contents of the recording cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or recording medium, etc.

Notes on image data compatibility

- This camera conforms with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electric and Information Technology Industries Association). You cannot play back on your camera still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E, DSC-D700, DSC-D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Do not shake or strike the camera

In addition to malfunctions and inability to record images, this may render the "Memory Stick" unusable or image data breakdown, damage or loss may occur.

Do not aim the camera at the sun or other bright light

This may cause irrecoverable damage to your eyes.

LCD screen, LCD finder (only models with a finder) and lens

- The LCD screen and the LCD finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the LCD finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions.

Do not get the camera wet

When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. If moisture condensation occurs, refer to page 83 and follow the instructions on how to remove it before using the camera.

Back up recommendation

To avoid the potential risk of data loss, always copy (back up) data to a disk.

Handling of the movable lens

This camera uses a movable lens.
Be careful not to strike or apply excessive force to the lens portion.

When the camera is used for long periods

Note that the camera body may become hot.

About the Carl Zeiss lens

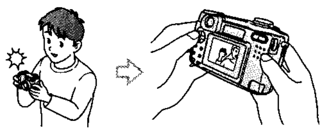
This camera is equipped with a Carl Zeiss lens which is capable of reproducing fine images. The lens for this camera uses the MTF* measurement system for cameras developed jointly by Carl Zeiss, in Germany, and Sony Corporation, and offers the same quality as other Carl Zeiss lenses.

* MTF is the abbreviation of Modulation Transfer Function/Factor, a numeric value indicating the amount of light from a specific part of the subject gathered at the corresponding position in the image.

Introduction

Checks the image after recording images

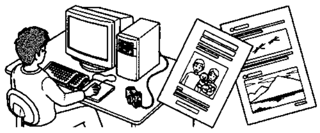
Recording still images:
page 19
Playing back still images:
page 28
Deleting images (DELETE):
page 71



Captures images with your computer

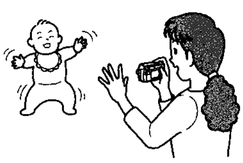
You can copy images onto your computer and view and modify images or attach images to e-mail on your computer using the supplied USB cable and application software.

Viewing images using a personal computer: page 31
Recording still images for e-mail (E-MAIL): page 55



Records a moving picture (MPEG Movie or Clip Motion) according to your purpose

The digital still camera can record a moving picture with audio (MPEG MOVIE):
page 26

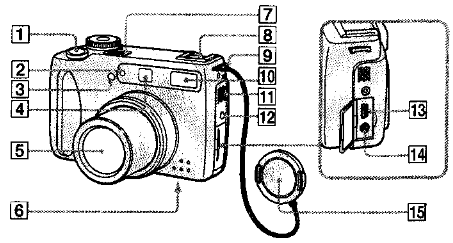


Selects the recording mode from various types of recordings according to your situation

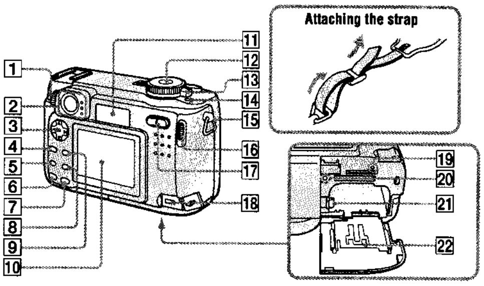
Creating Clip Motion Files: page 59
Adding audio files to still images (VOICE): page 56
Recording text documents (TEXT): page 57
Recording still images as uncompressed files (TIFF): page 58

Identifying the parts

See the pages in parentheses for details of operation.



1. **Shutter button (19, 27)**
2. **Self-timer (23, 27)/ AF illuminator (25)**
3. **Photocell window for flash**
   Do not block while recording with the flash.
4. **Finder window**
5. **Lens**
   When cleaning the lens, first return the lens to the fully retracted position and turn off the power, then gently wipe the lens.
6. **Tripod receptacle (bottom surface)**
   Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.
7. **Built-in microphone**
   Do not touch while recording.
8. **Accessory shoe**
9. **Hook for lens cap/strap**
10. **Flash (24)**
11. **Speaker**
12. **ACC (Accessory) jack**
13. **USB jack (33, 35)**
14. **A/V OUT jack (70)**
    Audio output is monaural.
15. **Lens cap (supplied)**
    Be sure to remove the lens cap before recording.

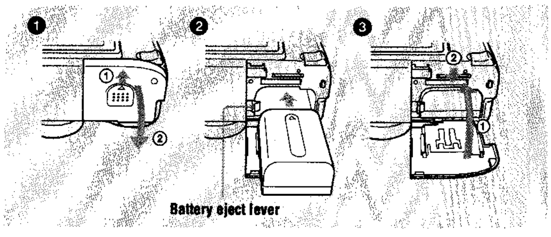


1. **Finder adjustment dial (21)**
2. **Finder**
   Self-timer/recording lamp (red)
   AE/AF lock lamp (green)
   ⚡ Flash charge lamp (orange) (24)
3. **Control button (18, 41)**
4. **MENU button (41)**
5. **☒ (Exposure) button (61)**
6. **FOCUS button (60)**
7. **AE LOCK button (50)**
8. **[●](spot meter) button (65)**
9. **DSPL/LCD ON/OFF button (23)**
10. **LCD screen**
11. **Display window**
12. **Mode dial (18, 40)**
    📷 : To record still images, VOICE mode audio data
    ▶ : To playback or edit images
    🎞 : To record moving images or Clip Motion images
    SET UP: To set the setup items
    SCN: To record in the SCENE SELECTION mode
    M: To record with the manual adjustment
    A: To record in the aperture priority mode
    S: To record in the shutter speed priority mode
13. **POWER switch (15)**
14. **POWER ON/OFF (CHG) lamp (15)**
15. **Hook for strap**
16. **Jog dial (42)**
17. **Zoom button (for recording) (22)/ INDEX/zoom button (for playback) (67)**
18. **DC IN jack (11, 14)**
19. **RESET button (87)**
20. **Access lamp (17)**
21. **Battery ejesct lever (10)**
22. **Battery/"Memory Stick" cover**

Preparing the power supply

Installing the battery pack

Your camera operates only with the "InfoLITHIUM" NP-FM50 battery pack* (M series). You cannot use any other battery pack. See page 85 for more information about "InfoLITHIUM" battery pack.



❶ **Open the battery/"Memory Stick" cover.**
Slide the cover in the direction of the arrow.

❷ **Install the battery pack.**
Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

❸ **Close the battery/"Memory Stick" cover.**

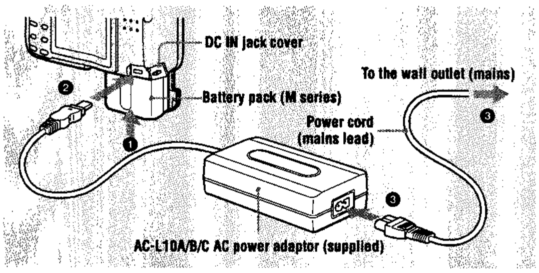
To remove the battery pack

Open the battery/"Memory Stick" cover. Slide the battery eject lever downward, and remove the battery pack.
Be careful not to drop the battery pack when removing it.

**** What is "InfoLITHIUM"?***
"InfoLITHIUM" is a lithium ion battery pack which can exchange information such as battery consumption with compatible video equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). "InfoLITHIUM" M series battery packs have the ⓘ InfoLITHIUM Ⓜ mark. "InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

You cannot charge the battery pack while your camera is turned on. Be sure to turn off your camera.



❶ **Insert the battery pack into your camera.**

❷ **Open the DC IN jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❸ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).**
The battery indicator ▭ flashes when charging begins. When the flashing stops and the FULL indicator appears in the display window, charging is completed.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camera.

Battery remaining indicator

The LCD screen on the camera shows the remaining time for which you can still record or play back images.
This indication may not be entirely accurate depending on the conditions of use and the operating environment.
Charging at 10°C to 30°C (50°F to 86°F) circumstances is recommended.

Using your camera abroad

For details, see page 86.

NP-FM50 battery pack

When you record images in an extremely cold location or using the LCD screen, the operating time becomes short. When using the camera in an extremely cold location, place the battery pack in your pocket or other place to keep it warm, then insert the battery pack into the camera just before recording. When using a pocket heater, take care not to let the heater directly contact the battery.

Charging time

Battery pack	Full charge (min.)
NP-FM50 (supplied)	Approx. 150

Approximate time to charge a completely discharged battery pack using the AC-L10A AC power adaptor at a temperature of 25°C (77°F).

Battery life and number of images that can be recorded/played back

Still image recording*

	NP-FM50 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 150	Approx. 2500
LCD screen OFF	Approx. 180	Approx. 3000

Still image playback**

	NP-FM50 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 270	Approx. 5000

Approximate battery life and number of images that can be recorded/played back with a fully charged battery pack at a temperature of 25°C (77°F), 640×480 image size, standard picture quality and in NORMAL recording mode.

* Recording at about 4-second intervals
**Playing back single images in order at about 3-second intervals

Moving image recording

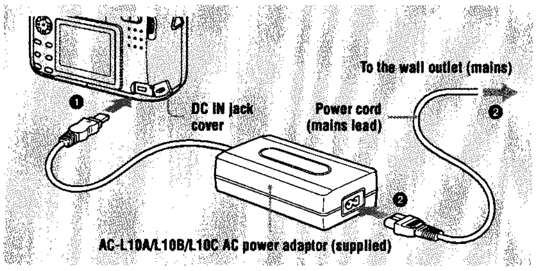
	NP-FM50 (supplied)	
	LCD screen OFF (min.)	LCD screen ON (min.)
Continuous recording	Approx. 210	Approx. 170

Approximate recording time with a fully charged battery pack at a temperature of 25°C (77°F) and 160×112 image size.

Notes

- The battery life and number of images will be decreased if you use your camera at low temperatures, use the flash, repeatedly turn the power on/off or use the zoom.
- The numbers of images shown on tables above are as a guide. The numbers may be smaller depending on conditions.
- The capacity of the "Memory Stick" is limited. The above figures are a guide when you continuously record/play back while replacing the "Memory Stick."
- "----" appears in the display window until the battery usable time is calculated.
- During charging, the indicators in the display window may not appear correctly or may flash in the following cases.
  - When the battery pack is not installed correctly.
  - When the AC power adaptor is disconnected.
  - When the battery pack has malfunctioned.
- When you turn the LCD screen on and off, it takes about one minute for the correct battery remaining time to appear.
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug of the AC power adaptor with a metallic object, as this may cause malfunction.

Using the AC power adaptor


To the wall outlet (mains)
DC IN jack cover
Power cord (mains lead)
AC-L10A/L10B/L10C AC power adaptor (supplied)
❶
❷
❷

❶ **Open the DC IN jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❷ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).**

Using a car battery

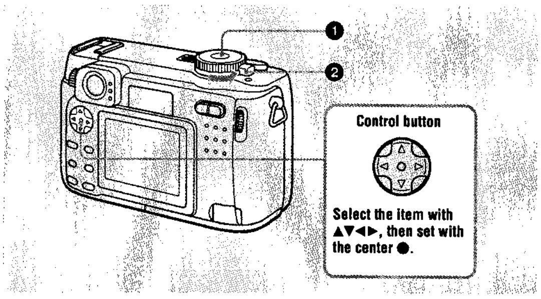
Use Sony DC adaptor/charger (not supplied).

When using the AC power adaptor

Be sure to use it near the wall outlet. If a malfunction occurs, disconnect the plug from the wall outlet.

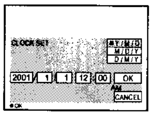
Setting the date and time

When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen appears whenever you turn on your camera.

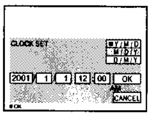

❶
❷
Control button
Select the item with ▲▼◀▶, then set with the center ●.

❶ **Set the mode dial to 📷, S, A, M, SCN, ▶, or 🎞.**

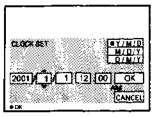
❷ **Slide the POWER switch in the direction of the arrow to turn on the power.**
The POWER ON/OFF (CHG) lamp (green) lights up.
The CLOCK SET screen appears on the LCD screen.
To change the date and time, set the mode dial to SET UP (page 81) and perform the procedure from step ❸.


CLOCK SET
Y/M/D
M/D/Y
D/M/Y
2001 1 1 12 00
OK
AM
CANCEL
● OK

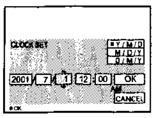
❸ **Select the desired date display format with ▲/▼ on the control button, then press the center ●.**
Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year) or [D/M/Y] (day/month/year).


CLOCK SET
Y/M/D
M/D/Y
D/M/Y
2001 1 1 12 00
OK
AM
CANCEL
● OK

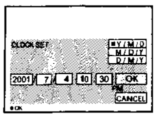
❹ **Select the year, month, day, hour or minute item you want to set with ◀/▶ on the control button.**
The item to be set is indicated with ▲/▼.


CLOCK SET
Y/M/D
M/D/Y
D/M/Y
2001 1 1 12 00
OK
AM
CANCEL
● OK

❺ **Set the numeric value with ▲/▼ on the control button, then press the center ● to enter it.**
After entering the number, ▲/▼ moves to the next item.
If you selected [D/M/Y] in step ❸, set the time on a 24-hour cycle.


CLOCK SET
Y/M/D
M/D/Y
D/M/Y
2001 7 1 12 00
OK
AM
CANCEL
● OK

❻ **Select [OK] with ▶ on the control button, then press the center ● at the desired moment to begin clock movement.**
The date and time are entered.


CLOCK SET
Y/M/D
M/D/Y
D/M/Y
2001 7 4 10 30
OK
PM
CANCEL
● OK

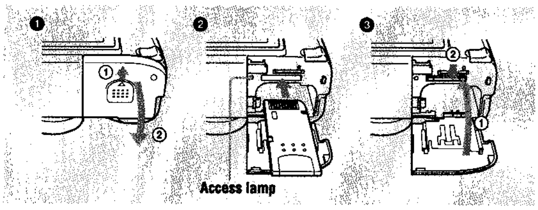
To cancel the date and time setting

Select [CANCEL] with ▲/▼/◀/▶ on the control button, then press the center ●.

Note

If the rechargeable button battery is ever fully discharged (page 84), the CLOCK SET screen will appear again. When this happens, reset the date and time, by starting from step ❸ above.

Inserting the "Memory Stick"


❶
①
②
❷
Access lamp
❸
②
①

❶ **Open the battery/"Memory Stick" cover.**
Slide the cover in the direction of the arrow.

❷ **Insert the "Memory Stick."**
Insert the "Memory Stick" with the ▶ mark facing toward the battery compartment as illustrated until it clicks.

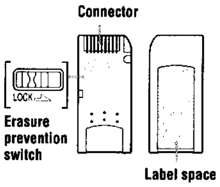
❸ **Close the battery/"Memory Stick" cover.**

Removing the "Memory Stick"

Open the battery/"Memory Stick" cover, then press the "Memory Stick" once lightly.

Notes

- Insert the "Memory Stick" firmly until it clicks, otherwise a message such as "MEMORY STICK ERROR" will be displayed.
- Never remove the "Memory Stick" or turn off the power while the access lamp is lit up.
- You cannot record or edit images on a "Memory Stick" if the erasure prevention switch is set to the LOCK position.

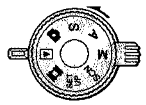

Connector
LOCK
Erasure prevention switch
Label space

The position and shape of the erasure prevention switch may differ depending on the types of "Memory Stick" used.

Basic operations

How to use the mode dial

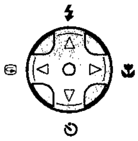
The mode dial switches the function which is used for recording, playback, or editing. Set the dial as follows before starting to operate your camera.


S
A
M
SCN
SET UP

📷: To record still images, VOICE mode audio data
▶: To play back or edit images
🎞: To record moving images or Clip Motion images
SET UP: To set the setup items (The SET UP position changes the settings of infrequently-used items.)
SCN: To record in the SCENE SELECTION mode (Set in advance the SCENE SELECTION in SET UP screen)
M: To record with the shutter speed and aperture set manually
A: To record in the aperture priority mode
S: To record in the shutter speed priority mode

How to use the control button

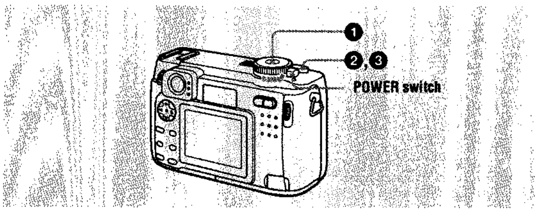
When the menu is not displayed, the control button is used to perform the following operations.



⚡ (▲): Recording with flash
⏲ (▼): Recording with self-timer
⊜ (◀): Checking the last recorded image
🌷 (▶): Recording close subjects

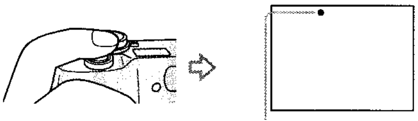
Recording still images

Still images are recorded in JPEG format.
Before recording still images, slide the POWER switch in the direction of the arrow to turn on the power and insert a "Memory Stick."

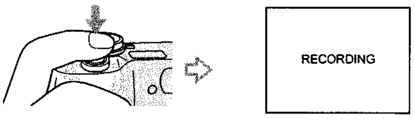


❶ **Set the mode dial to 📷, S, A, M or SCN.**

❷ **Press and hold the shutter button halfway down.**
The image freezes momentarily, but is not yet recorded. While the AE/AF lock indicator ● is flashing, the camera automatically adjusts the exposure and focus of the captured image. When the camera finishes the automatic adjustments, the AE/AF lock indicator ● stops flashing, then lights up and the camera is ready for recording.*
If you release the shutter button, the recording will be canceled.


AE/AF lock indicator (green) flashes → lights up

❸ **Press the shutter button fully down.**
The shutter sounds.
"RECORDING" appears on the LCD screen, and the image will be recorded on the "Memory Stick." When "RECORDING" disappears, you can record the next image.



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* If the flashing AE/AF lock indicator changes to flashing slowly, the subject may be difficult to focus on (dark, poor contrast) or the subject may be extremely close. Release the shutter button, then focus again.

Auto power-off function

If you do not operate the camera for about three minutes during recording or playback, the camera turns off automatically to prevent wearing down the battery. To use the camera again, slide the POWER switch in the direction of the arrow to turn on the camera again. The auto power-off function only operates when the camera is operating using a battery pack. The auto power-off also will not operate when playing back moving images or playing back a SLIDE SHOW (page 68), or when a connector is plugged into the USB jack, the DC IN jack or the A/V OUT jack.

The number of images you can record on a "Memory Stick" (8 MB or 16 MB)

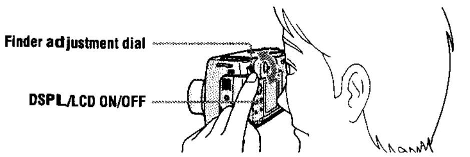
See pages 49 and 55 to 60.

Notes

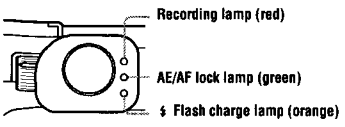
- Do not touch the lens portion while it is operating.
- When recording a bright subject, the LCD screen color may change after AE/AF lock, but this does not affect the recorded image.
- When you press the shutter button fully down at once in step ❷, the camera starts recording after the automatic adjustment is complete. However, the recording cannot be carried out while the ⚡ flash charge lamp (page 21) is flashing. (During this time, the camera is charging the flash.)

Recording images with the finder

You can extend the battery time by turning off the LCD screen and recording using the finder. Turn the finder adjustment dial until the image appears clearly within the finder, then record the image.



Indicators in the finder

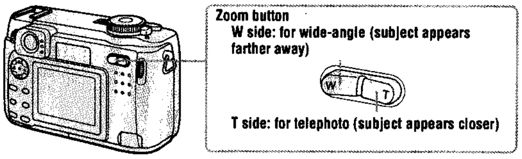


Checking the last recorded image (Quick Review)

You can check the last recorded image by clearing the menu from the screen (page 41) and pressing ◄ (⊜) on the control button.
To return to the normal recording mode: press lightly on the shutter button or press ◄ (⊜) again.
To delete the image: 1. Press MENU. 2. Select [DELETE] with ► on the control button, then press the center ●. 3. Select [OK] with ▲ on the control button, then press the center ●.

Using the zoom feature

The lens portion moves during zoom operation. Be careful not to touch the lens portion while it is operating.

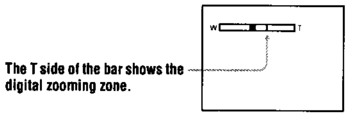

Zoom button
W side: for wide-angle (subject appears farther away)
W
T
T side: for telephoto (subject appears closer)

Minimum focal distance to the subject

W side: About 50 cm (19 3/4 inches) or more
T side: About 50 cm (19 3/4 inches) or more
To record even closer subjects, see page 61.

Digital zoom function

This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing and it starts to function when zoom exceeds 3x.



Using digital zoom

- The maximum zoom magnification is 6×.
- Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the setup settings (page 80).

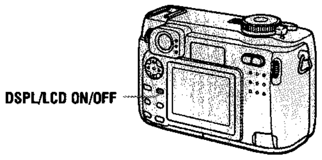
Notes

- Zoom does not work for moving images.
- Use the LCD screen when using the digital zoom function. Digitally zoomed images do not appear in the finder.
- The AF frame (page 99) does not appear on the LCD screen.

The indicators on the LCD screen

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows:

The LCD backlight is turned on.
(All the available indicators are turned on.)
↓
The LCD backlight is turned on.
(Warning messages and manual adjustment items which are set using the jog dial are turned on.)
↓
The LCD backlight is turned off.



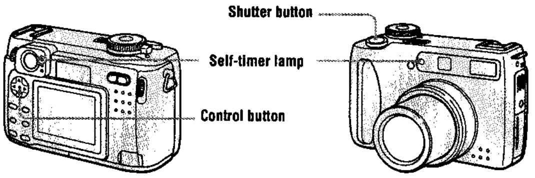
See page 99 for a detailed description of the indicated items.

Notes

- Because of the difference of the portion of the finder and the lens, use the LCD screen when you record a subject closer than 1 m (3 1/4 feet).
- You cannot turn off the LCD screen when [DEMO] or [CONVERSION LENS] are set to [ON] in the SET UP settings.
- You cannot turn off the LCD backlight in SET UP and when displaying the menu.
- You cannot turn off the self-timer indicators and some of the indicators used in advanced operations.
- The indicators on the LCD screen are not recorded.

Using the self-timer

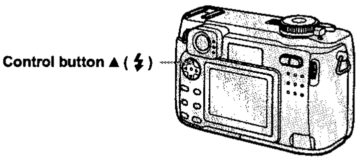
When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.



Clear the menu (page 41), then press the control button ▼ (⏲). The ⏲ (self-timer) indicator appears on the LCD screen, and about 10 seconds after you press the shutter button, the subject is recorded. The self-timer lamp flashes and the beep sounds after you press the shutter button until the shutter is released. To cancel the self-timer recording, press the control button ▼ (⏲) again.

Recording images with the flash

The factory setting is auto (no indicator). In this mode, the flash automatically strobes when the surroundings is dark. To change the flash mode, clear the menu (page 41), then press the control button ▲ (⚡) repeatedly so that the flash mode indicator appears on the LCD screen.



Each time you press the control button ▲ (⚡), the indicator changes as follows.

(No indicator) → ⚡ → ⊘ → (No indicator)

⚡ Forced flash:	The flash strobes regardless of the surrounding brightness.
⊘ No flash:	The flash does not strobe.

You can change the brightness of the flash with [⚡±] (FLASH LEVEL) in the menu settings (page 45).

To reduce the red-eye phenomenon

Set [RED EYE REDUCTION] to [ON] in the setup settings, the flash strobes before recording to reduce the red-eye phenomenon (page 80). When [ON] is selected, ◉ appears on the LCD screen.

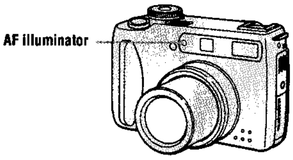
Notes

- When [ISO] is set to [AUTO] in the menu settings, the recommended shooting distance using the built-in flash is 0.3 m to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches). When it is not set to [AUTO], the flash may be ineffective even if the flash level is changed.
- Attaching a conversion lens (not supplied) may block the light from the flash or cause the lens shadow to appear.
- You cannot use an external flash (not supplied) and the built-in flash at the same time.
- Red-eye reduction may not produce the desired effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions.
- Red-eye reduction effects are also difficult to obtain if you set the shutter to a slow speed in the shutter speed priority mode.
- The flash effect is not obtained easily when you use forced flash in a bright location.
- While charging the flash, the ⚡ flash charge lamp flashes. After the charging is complete, the lamp goes out.

- The flash does not function when recording moving images (excluding Clip Motion) or recording in BURST mode or in EXP BRKTG (DSC-S85 only) mode.

Recording images with the AF illuminator

The AF illuminator is fill light to focus on a subject easily under dark conditions. Set [AF ILLUMINATOR] (page 80) to [ON] in the setup settings, ☼ON appears on the LCD screen and the AF illuminator emits light when the shutter button is pressed halfway. It keeps emitting light until the focus is locked.

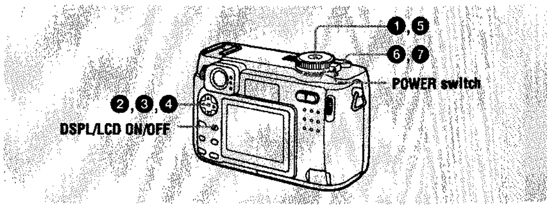


Notes

- If AF illuminator light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. (Approximate 0.3 to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches) distance is recommended.)
- In TWILIGHT mode of the SCENE SELECTION function (page 52), the AF illuminator will emit only when the flash mode is set to ⚡ (Forced flash).
- The AF illuminator will not emit when the LANDSCAPE mode of the SCENE SELECTION function (page 52) is selected or [CONVERSION LENS] (page 81) is set to [ON] in the setup settings.
- Focus is achieved as long as AF illuminator light reaches to the subject even if its light is slightly out of the middle position of the subject.
- The AF illuminator does not operate when adjusting focus manually.
- The AF illuminator is a very bright light. Although it is safe to use, avoid shining it directly into someone's eyes at a close distance.

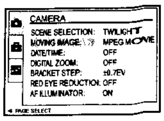
Recording moving images

Moving images with audio are recorded in MPEG format (page 39).
To record moving images, slide the POWER switch in the direction of the arrow to turn on the power and insert a "Memory Stick."



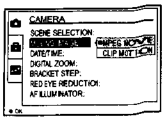
❶ **Set the mode dial to SET UP.**

❷ **Select [📷] (CAMERA) with ▲/▼ on the control button, then press ▶.**



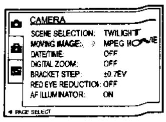
CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: OFF
BRACKET STEP: ±0.7EV
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON

❸ **Select [MOVING IMAGE] with ▲/▼ on the control button, then press ▶.**



CAMERA
SCENE SELECTION:
MOVING IMAGE: ●MPEG MOVIE
DATE/TIME: CLIP MOTION
DIGITAL ZOOM:
BRACKET STEP:
RED EYE REDUCTION:
AF ILLUMINATOR:

❹ **Select [MPEG MOVIE] with ▲/▼ on the control button, then press the center ●.**



CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: OFF
BRACKET STEP: ±0.7EV
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON

❺ **Select the mode dial to 🎞.**

❻ **Press the shutter button fully down.**
"REC" appears on the LCD screen, and recording of the image and sound on the "Memory Stick" begins.

❼ **Press the shutter button fully down again to stop recording.**
The recording stops.
When selecting the 320 (HQ) size: The recording stops in approximate 15 seconds (page 48).
When selecting the 320×240 or 160×112 sizes: The recording stops when the "Memory Stick" is full.
For details on the image size, see "Setting the image size (IMAGE SIZE)" on page 48.

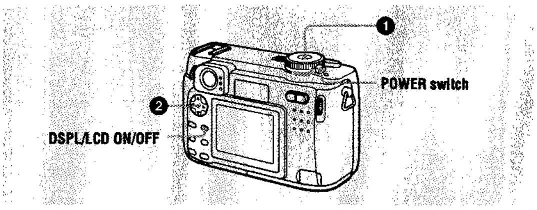
Using the self-timer

When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.
Clear the menu (page 41), then press the control button ▼ (⌚). The ⌚ (self-timer) indicator appears on the LCD screen, and the recording starts about 10 seconds after you press the shutter button. The self-timer lamp flashes and the beep sounds after you press the shutter button until the shutter is released. To stop the self-timer recording, press the control button ▼ (⌚) again.

LCD screen indicators during recording

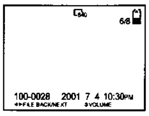
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
These indicators are not recorded. See page 100 for a detailed description of the indicators.

Playing back still images



❶ **Set the mode dial to ▶.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired still image with the control button ◀/▶.**
◀: To display the preceding image.
▶: To display the next image.



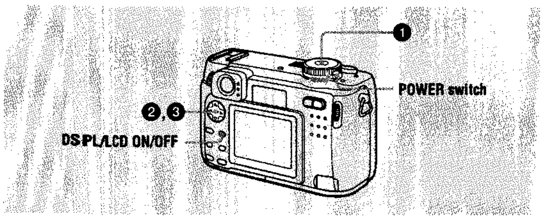
Notes

- You might not be able to correctly play back images recorded with this camera on other equipment.
- You cannot play back on this camera images larger than the maximum image size that can be recorded with this camera.

LCD screen indicators during still image playback

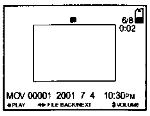
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 101 for a detailed description of the indicators.

Playing back moving images

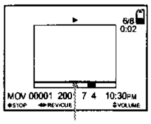


❶ **Set the mode dial to ▶.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired moving image with the control button ◀/▶.**
Moving images are displayed one-size smaller than still images.
◀: To display the preceding image.
▶: To display the next image.



❸ **Select the center ● to start the playback.**
The moving image and sound are played back.
During playback, ▶ (playback) appears on the LCD screen.
To advance or rewind, press the control button ◀/▶ during playback.



To pause playback
Press the center ● on the control button to stop the playback.

To advance or rewind the moving image
Press the control button ◀/▶ during playback.
To return to the normal playback, press the center ● on the control button.

Moving images recorded with the image of [320 (HQ)] (page 48)
The images are displayed over the entire screen in steps ❷ and ❸.

Adjusting the volume

Press the control button ▲/▼ to adjust the volume.

LCD screen indicators during moving image playback

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 101 for a detailed description of the indicators.

Viewing images using a personal computer

You can view data recorded with your camera on a personal computer, modify and attach it to e-mail using application software. This section describes the method for viewing images on a personal computer using the supplied USB cable.
There are two ways to make the USB connection, which are the normal connection and the PTP connection (page 81). This is set using [USB CONNECT] in the setup settings. Users will be informed at the Sony website when PTP connection is supported. Here describes the way using the [NORMAL] setting.

The factory setting of USB mode is [NORMAL].
The mode can be checked and set as follows.

① Set the mode dial to SET UP.
② Select [SETUP2] with ▲/▼, then press ▶.
③ Select [USB CONNECT] with ▲/▼, then press ▶.
④ Select the connection mode with ▲/▼.

The USB cable is used to connect the camera to a personal computer so that operations can be performed on image files recorded in a "Memory Stick" from the personal computer.
In order to use the USB cable, a USB driver must be installed in the personal computer beforehand.
Be sure to also refer to the operation manuals for your personal computer and the application software.

Notes

- Data recorded with your camera is stored in the following formats. Make sure that applications that support these file formats are installed on your personal computer.
  - — Still images (other than TEXT mode, uncompressed mode and Clip Motion): JPEG format
  - — Moving images/audio: MPEG format
  - — Uncompressed mode still images: TIFF format
  - — TEXT mode/Clip Motion: GIF format
- Depending on your application software, the file size may increase when you open a still image file.
- When you copy the image to the camera from your computer, which was modified with a retouching software and was converted to another file format, the "FILE ERROR" message may appear and you may be unable to open the image.
- Depending on your application software, only the first frame of the Clip Motion file may be played back.

Communications with your computer (for Windows only)
Communications between your camera and your computer may not recover after recovering from Suspend or Sleep.

Recommended computer environment

Recommended Windows environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition
The above OS is required to be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.
CPU: MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.

Recommended Macintosh environment

Macintosh computer with the Mac OS 8.5.1/8.6/9.0/9.1 standard installation
However, note that the update to Mac OS 9.0/9.1 should be used for the following models.

- iMac with the Mac OS 8.6 factory pre-installed and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 factory pre-installed

Macintosh computer with MacOSX (v10.0)
The USB connector must be provided as standard.
QuickTime 3.0 or newer must be installed (to play back moving pictures).

Notes

- If you connect two or more USB equipment to a single personal computer at the same time, some equipment may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

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- Macintosh and Mac OS, QuickTime are either registered trademarks or trademarks of Apple Computer, Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual

Installing the USB driver

Before connecting your camera to your personal computer, install the USB driver to the computer. The USB driver is included with the application software in the CD-ROM which is supplied with your camera.

Be sure to complete installation of the USB driver before connecting the USB cable. If you connect the USB cable first, you will be unable to install the USB driver properly.

See page 93 for corrective measures if the USB cable was connected before installing the driver and the driver software could not be installed correctly.

For Windows 98/98SE/Me and Windows 2000 users

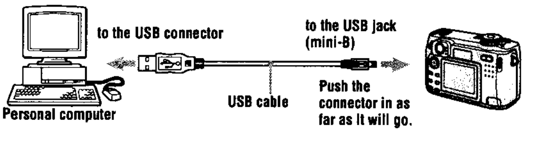
❶ **Turn on your personal computer and allow Windows to load.**
Do not connect the USB cable in this step.

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your personal computer.**
The application software screen appears.

❸ **Click "USB Driver Installation for Windows 98/98SE/Me and Windows 2000".**
USB driver installation starts.

❹ **Follow the on-screen messages to install the USB driver.**
Your personal computer may restart.

❺ **Connect the USB jack (mini-B) on your camera with the USB connector on your personal computer using the supplied USB cable.**



❻ **Insert a "Memory Stick" into your camera, connect the AC power adaptor and turn on your camera.**
"USB MODE" appears on the LCD screen of your camera and the camera is set to communication standby mode. Your personal computer recognizes the camera, and the Windows Add Hardware Wizard starts.

❼ **Follow the on-screen messages to have the Add Hardware Wizard recognize the hardware.**
The Add Hardware Wizard starts twice because two different USB drivers are to be installed. Be sure to allow the installation to complete without interrupting it.

Notes

- Do not connect the USB cable before the USB driver installation is completed in step **4**.
- In step **7**, make sure that a "Memory Stick" is inserted into your camera before installing the USB driver. Otherwise, you will be unable to install the USB driver.

For Macintosh users

• When using MacOS9.1/MacOSX (v10.0)

It is not necessary to install the USB driver. The Macintosh recognizes the camera as a drive simply by connecting it to the Macintosh with the USB cable.

• When using MacOS8.5.1/8.6/9.0

Follow the procedures below to install the driver.

❶ **Turn on your personal computer and allow the Mac OS to load.**

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your personal computer.**

❸ **Double-click the CD-ROM drive icon to open the window.**

❹ **Double-click the icon of the hard disk containing the OS to open the window.**

❺ **Move the following two files from the window opened in step ❸ to the "System Folder" icon in the window opened in step ❹ (drag and drop).**
- Sony USB Driver
- Sony USB Shim

❻ **When "Put these items into the Extensions folder?" appears, click "OK."**

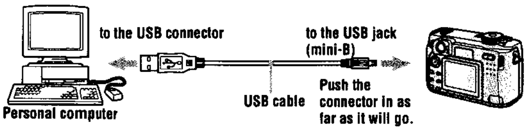
❼ **Restart your personal computer.**

Viewing images

When viewing moving images on a Windows system, RealPlayer, Windows Media Player or other moving image playback applications must be installed. When viewing moving images on a Macintosh system, QuickTime3.0 or later must be installed.

❶ **Turn on the power of your personal computer and allow Windows or Mac OS to load.**

❷ **Connect the USB jack (mini-B) on the camera with the USB connector on your personal computer using the supplied USB cable.**



❸ **Insert a "Memory Stick" into your camera, and connect the AC power adaptor to your camera and then to a wall outlet (mains).**

❹ **Turn on the power of your camera.**
"USB MODE" appears on the LCD screen of the camera.

For Windows 98/98SE/Me and Windows 2000 users

❺ **Open "My Computer" on Windows and double click the newly recognized drive. (Example: "Removable Disk (E:)")**
The folders inside the "Memory Stick" are displayed.
If the drive is not recognized, see "Troubleshooting" on page 87.

❻ **Select and double-click the desired image/sound file from the folder.**
For the detailed folder and file name, see "Image file storage destinations and image files" on page 38.

Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving image*	"Mssony" folder → "Moml0001" folder → Image file*
Audio*	"Mssony" folder → "Momlv100" folder → Audio file*
Clip Motion image	"Dcim" folder → "100msdcf" folder → Image file
E-mail image TIFF image (uncompressed)	"Mssony" folder → "Imcif100" folder → Image file

* Copying a file to the hard disk of your personal computer before viewing it is recommended. If you play back the file directly from the "Memory Stick", the image and sound may break off.

For Macintosh users

Follow the procedure ❶ - ❹ on page 35.

❺ **Double click the newly recognized icon on the desktop.**
The folders inside the "Memory Stick" are displayed.

❻ **Select and double-click the desired image/sound file from the folder.**

Notes on using your personal computer

"Memory Stick"

- Operation is not guaranteed if you are using a "Memory Stick" that was formatted with a personal computer, or if you used a personal computer to format the "Memory Stick" in your camera through a USB connection.
- Do not optimize the "Memory Stick" on a Windows machine. This will shorten the "Memory Stick" life.
- Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camera.

For Windows Me and Windows 2000 users

The following procedures are recommended when disconnecting the USB cable from your personal computer or ejecting the "Memory Stick" from the camera while it is connected to your personal computer.

1 Stop the drive by clicking on the "Unplug/Eject" icon in the task tray.
2 When the message appears confirming the safe removal of the hardware, disconnect the USB cable or eject the "Memory Stick".

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using the supplied retouch software from your personal computer to the camera or when you directly modify the image on the camera, the image format will differ so the "FILE ERROR" message may appear and you may be unable to open the file.
- Depending on your application software, only the first frame of the Clip Motion file may be played back.

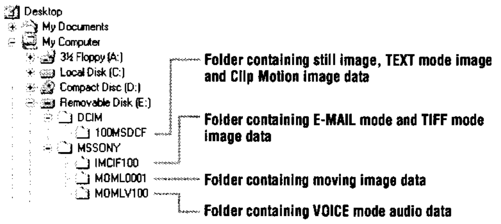
Communications with your personal computer (for Windows only)

Communications between your camera and your personal computer may not recover after recovering from Suspend, Resume, or Sleep.

Image file storage destinations and image files

Image files recorded with your camera are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows Me users (The drive recognizing the camera is "E.")


Desktop
My Documents
My Computer
3½ Floppy (A:)
Local Disk (C:)
Compact Disc (D:)
Removable Disk (E:)
DCIM
100MSDCF
MSSONY
IMCIF100
MOML0001
MOMLV100
Folder containing still image, TEXT mode image and Clip Motion image data
Folder containing E-MAIL mode and TIFF mode image data
Folder containing moving image data
Folder containing VOICE mode audio data

Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in – E-MAIL mode (page 55) – TIFF mode (page 58) – VOICE mode (page 56) – Burst mode (page 53)
	CLP0□□□□.GIF	• Clip Motion file recorded in NORMAL mode (page 59)
	CLP0□□□□.THM	• Index image file of Clip Motion file recorded in NORMAL mode
	MBL0□□□□.GIF	• Clip Motion file recorded in MOBILE mode (page 59)
	MBL0□□□□.THM	• Index image file of Clip Motion file recorded in MOBILE mode
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 57)
	TXT0□□□□.THM	• Index image file of still image file recorded in TEXT mode

Folder	File	Meaning
IMCIF100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 55)
	DSC0□□□□.TIF	• Uncompressed image file recorded in TIFF mode (page 58)
MOML0001	MOV0□□□□.MPG	• Moving image file recorded normally
MOMLV100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 56)

The numerical portions of the following files are the same.
- A small-size image file recorded in E-MAIL mode and its corresponding image file
- An uncompressed image file recorded in TIFF mode and its corresponding image file
- An audio file recorded in VOICE mode and its corresponding image file
- An image file recorded in TEXT mode and its corresponding index image file
- An image file recorded with Clip Motion and its corresponding index image file

Tips

The digital still camera saves recorded images as digital data. The format of the saved data is called as the file format. The formats that can be used with this camera are as follows:

JPEG format

Most digital still cameras, operating systems of computers, and browser software adopt this format. This format is able to compress files without appreciable deterioration. However, if the image is compressed and saved on repeated occasions, the image will deteriorate. This camera records still images using the JPEG format for normal recording.

GIF format

Using this format, the image will not deteriorate even if the image is compressed and saved on repeated occasions. This format limits the number of colors to 256 colors. This camera records still images using the GIF format in Clip Motion (page 59) or TEXT mode (page 57).

TIFF format

Stores shooting images without compression, so the image does not deteriorate. Most of operating systems and applications correspond to this format. This camera records still images using the TIFF format for the TIFF mode (page 58).

MPEG format

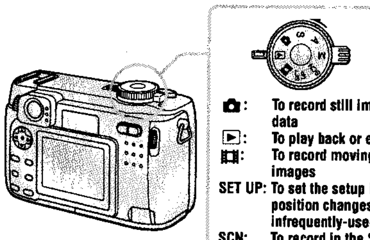
This format is very typical for moving images. This camera records audio using the MPEG format for the moving images recording and the VOICE mode (page 56).

Before performing advanced operations

This section describes the basic control methods that are frequently used for "Advanced operations."

How to use the mode dial

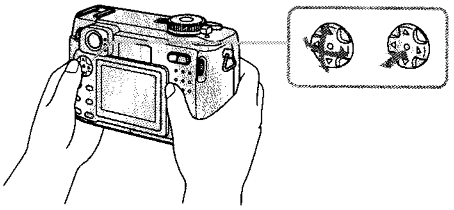
The mode dial switches the function which is used for recording, playback, or editing. Set the dial as follows before starting to operate your camera.



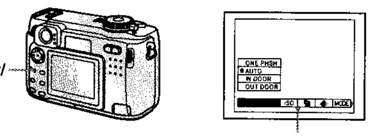
📷: To record still images, VOICE mode audio data
▶: To play back or edit images
🎞: To record moving images or Clip Motion images
SET UP: To set the setup items (The SET UP position changes the settings of infrequently-used items.)
SCN: To record in the SCENE SELECTION mode
M: To record with the shutter speed and aperture set manually
A: To record in the aperture priority mode
S: To record in the shutter speed priority mode

How to use the control button

When the menu or setup screen is displayed, the control button is used to select the buttons, images and menu items displayed on the LCD screen of your camera and modify the settings. The operation methods that are frequently used for "Advanced operations" are described below.



Turning on/off the operation buttons (menu) on the LCD screen

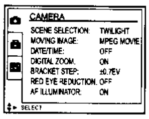


Press MENU to display/ clear the menu on the LCD screen.

Menu

Setting up the items in the setup or menu

❶ **Set the mode dial to SET UP so that the setup screen appears, or press MENU so that the menu appears.**



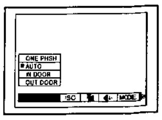
CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: ON
BRACKET STEP: ±0.7EV
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON
SELECT

❷ **When the mode dial is set to SET UP or ▶:**

① Press ▲/▼/◀/▶ on the control button to select the item you want to set up.
② Press the center ● on the control button to enter the item.

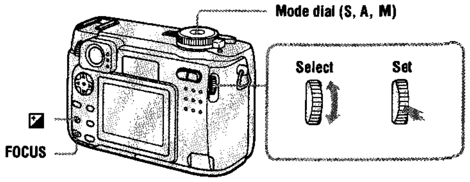
When the mode dial is set to 📷, S, A, M, SCN, or 🎞:

Press ▲/▼/◀/▶ on the control button to select the setting of the item.
The selected setting is turned to yellow, and the setup is complete.



How to use the jog dial

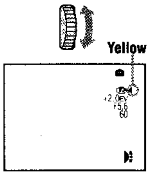
The functions which are used frequently in recording are set up using the jog dial and the following direct buttons. The jog dial is used to change the value in manual adjustments.



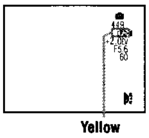
❶ **Set the mode dial to S, A, or M.**
The adjustable value number appears at the right corner on the LCD.

❷ **Turn the jog dial to select the item or value number you want to adjust.**

- When the indication ◀ at the right corner on the LCD screen is in yellow, you can select the item. In such cases, go to step ❸.
- When the value number at the right corner on the LCD screen is in yellow, you can adjust the value. (When you press FOCUS, the mark appears on value number position.)



When you adjust only the value, the adjustment is complete.



❸ **Press the jog dial.**

The value number turns to yellow. To adjust the value, repeat step ❷.

Viewing the next/previous image using the jog dial during playback

When the mode dial is set to ▶, you can easily view the next/previous image by turning the jog dial.

Menu settings

Menu items that can be modified differ depending on the positions of the mode dial. The LCD screen shows only the items you can operate at the moment. Factory settings are indicated with ■.

When the mode dial is set to /SCN/S/A/M

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 62).
ISO	400 200 100 ■AUTO	Selects the ISO film speed. When recording under dark situations or recording a fast-moving subject, use a high-number setting. When you record high-quality images, use a low-number setting (except when the mode dial is set to SCN).
(IMAGE SIZE)	■2272×1704 (DSC-S85 only) ■2048×1536 (DSC-S75 only) 2272 (3:2) (DSC-S85 only) 2048 (3:2) (DSC-S75 only) 1600×1200 1280×960 640×480	Selects the image size when recording still images.
(P. QUALITY)	■FINE	Records still images in the fine image quality mode.
	STANDARD	Records still images in the standard image quality mode.

Item	Setting	Description
MODE (REC MODE)	TIFF	Records a TIFF (uncompressed) file in addition to the JPEG file (page 58).
	TEXT	Records a GIF file in black-and-white (page 57).
	VOICE	Records an audio file (with a still image) in addition to the JPEG file (page 56).
	E-MAIL	Records a small-size (320×240) JPEG file in addition to the selected image size (page 55).
	EXP BRKTG (DSC-S85 only)	Records three images with the exposure value of each image slightly shifted (page 53).
	BURST3 (DSC-S85 only)	Records three images continuously (page 53).
	BURST2 (DSC-S75 only)	Records two images continuously (page 53).
	■NORMAL	Records an image using the normal recording mode.
± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 63).
(SHARPNESS)	+2 +1 ■ 0 -1 -2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

When the mode dial is set to (MOVING IMAGE is set to MPEG MOVIE in the setup settings.)

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 62).
(IMAGE SIZE)	320 (HQ) 320×240 ■160×112	Selects the MPEG image size when recording moving images (page 48).

Item	Setting	Description
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 63).

When the mode dial is set to (MOVING IMAGE is set to CLIP MOTION in the setup settings.)

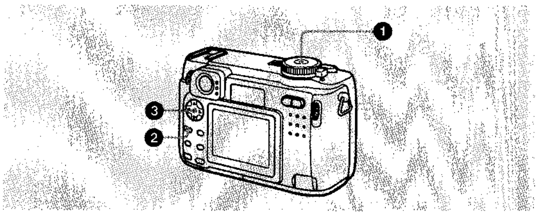
Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 62).
(IMAGE SIZE)	■NORMAL MOBILE	Selects the Clip Motion image size (page 59).
± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 63).
(SHARPNESS)	+2 +1 ■ 0 -1 -2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

When the mode dial is set to ▶

Item	Setting	Description
DELETE	OK	Deletes the displayed image (page 71).
	CANCEL	Cancels deleting of the image.
PROTECT	–	Protects images against accidental erasure (page 72).
PRINT	–	Marks the print mark on still images (page 76).
SLIDE*	INTERVAL	Sets the slide show interval. ■3 sec/5 sec/10 sec/30 sec/1 min
	REPEAT	■ON/OFF
	START	Starts the slide show.
	CANCEL	Cancels the slide show.
COPY	OK	Copies an image (page 75).
	CANCEL	Cancels copying of the image.
RESIZE*	2272×1704 (DSC-S85 only) 2048×1536 (DSC-S75 only) 1600×1200 1280×960 640×480 CANCEL	Changes the recorded image size (page 74).
ROTATE*	↷ ↶ OK CANCEL	Rotates the still image (page 69).
DIVIDE*	OK CANCEL	Divides a moving image (page 78).

* Only in single-image mode.

Setting the image size (IMAGE SIZE)



❶ **Set the mode dial to 📷, SCN, S, A, M, or 🎞.**

❷ **Press MENU.**
The menu appears.

❸ **Select the desired image size from [▦] (IMAGE SIZE) and press ▲/▼.**

Still image sizes:
DSC-S85
2272×1704, 2272 (3:2)*, 1600×1200, 1280×960, 640×480

DSC-S75
2048×1536, 2048 (3:2)*, 1600×1200, 1280×960, 640×480

* The image is recorded in the ratio of three to two to fit the printing paper size. Using this image size, the margin of an image is not printed out. However, the slight amount of the upper and lower black portions are displayed on the LCD screen.

Moving image (MPEG movie) sizes:
320 (HQ)*, 320×240, 160×112

* High Quality mode

Clip Motion sizes:
NORMAL (160×120), MOBILE (80×72)

The number of images* or the time that you can record on a "Memory Stick" (8 MB or 16 MB)*****

Still images:

Image size	Usage	Quality	
		STANDARD	FINE
2272×1704 (DSC-S85 only)	Modifying images	Approx. 7 (14)	Approx. 4 (8)
2272 (3:2) (DSC-S85 only)	Printing in 3:2 ratio	Approx. 7 (14)	Approx. 4 (8)
2048×1536 (DSC-S75 only)	Modifying images	Approx. 9 (18)	Approx. 5 (10)
2048 (3:2) (DSC-S75 only)	Printing in 3:2 ratio	Approx. 9 (18)	Approx. 5 (10)
1600×1200	Printing in A4 format	Approx. 15 (30)	Approx. 8 (16)
1280×960	Printing in post card size	Approx. 22 (44)	Approx. 12 (24)
640×480	Attaching to e-mail	Approx. 118 (240)	Approx. 48 (96)

Moving images:

Image size	Usage	Number of images or time
320 (HQ)	Viewing on TV	Approx. 20 (40) sec.
320×240	Viewing on web site	Approx. 80 (160) sec.
160×112	Attaching to e-mail	Approx. 320 (640) sec.
MOBILE (80×72)	—	Approx. 350 (450)
NORMAL (160×120)****	—	Approx. 40 (80)

* When MODE (REC MODE) is set to NORMAL.
** The maximum recording time in continuous recording.
*** The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).
**** When recording 10 frames per Clip Motion file.

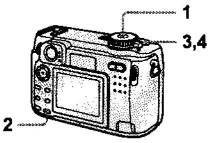
Remaining number of recordable images or recordable time (page 99)
The actual number of remaining images or recordable time may differ depending on the recording conditions.

▶ Various recording

Recording with the exposure fixed (AE LOCK)

Mode dial: 📷/S/A/M/SCN

Once you press AE LOCK, the exposure, now captured, is fixed. For instance, this function is convenient in the following use:
Measure the exposure of the desired portion of the subject using the spot light-metering function and fix its exposure value by pressing AE LOCK. Then, recompose the picture.



1 Set the mode dial to 📷, S, A, M or SCN.

2 Target the subject that has desired exposure value, then press AE LOCK.
The exposure is fixed and the AE-L mark appears.

3 Target the subject you want to record and press and hold the shutter button halfway down.
The focus is automatically adjusted.

4 Press down the shutter button.

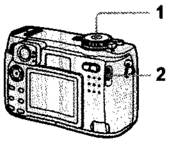
To release AE LOCK
Carry out one of the followings:
- Press AE LOCK again after step **2**.
- Release your finger from the shutter button after step **3**.
- Press down the shutter button in step **4**.

Recording with the manual adjustments

Mode dial: S/A/M

Shutter speed priority mode

Once the shutter speed is adjusted manually, the aperture will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. Using the higher shutter speed, you can record a fast-moving subject with its motion frozen. And using the lower shutter speed, you can record the flow motion of a moving subject.

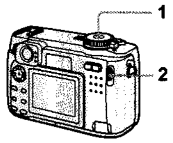


1 Set the mode dial to S.

2 Select a shutter speed with the jog dial, then press the jog dial.
The shutter speed can be selected from 8" to 1/1000.

Aperture priority mode

Once the aperture is adjusted manually, the shutter speed will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. Selecting a lower aperture value opens the lens iris. Using a lower aperture value, you can record a subject with its background unclear. And using a higher aperture value, you can record both the subject and the background stand out clearly.

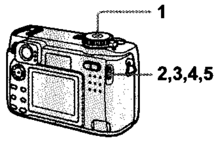


1 Set the mode dial to A.

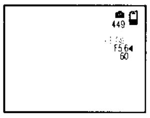
2 Select an aperture value with the jog dial, then press the jog dial.
The aperture value can be selected from F2 to F8.

Manual exposure mode

You can manually adjust the shutter speed and aperture values to achieve the desired shooting condition according to your purpose. The exposure value appears on the LCD screen (page 61). And you can also adjust the aperture value and the shutter speed value according to your taste. 0 EV is the most suitable value set by the camera.



1 Set the mode dial to M.



2 Select the aperture value indication with the jog dial, then press the jog dial.

3 Select the aperture value with the jog dial, then press the jog dial.

4 Select the shutter speed value indication with the jog dial, then press the jog dial.

5 Select the shutter speed value with the jog dial, then press the jog dial.
For details on available values, see "Shutter speed priority mode" on page 51, or "Aperture priority mode" on page 51.

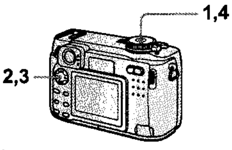
Note

If the setting is not appropriate in aperture priority mode, shutter speed priority mode, or manual exposure mode, the setting value indicator on the LCD screen flashes. You can record in this setting, we, however, recommend that you adjust the flashed-value again.

Records images according to shooting conditions (SCENE SELECTION)

Mode dial: SCN

This camera has preset three SCENE SELECTION modes. Each mode is suitable for the following situations; night scene, landscape, and portrait.



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [📷] (CAMERA) with ▲/▼, [SCENE SELECTION] with ▶/▲/▼, then press ▶.

3 Select the desired setting, then press ●.

☽ TWILIGHT mode
Allows you to record bright subjects in dark places without losing the dark atmosphere of the surroundings. The shutter speed becomes slower, so we recommend that you use a tripod to prevent shaking.

▨ LANDSCAPE mode
Focuses only on a distant subject to record landscapes, etc.

👤 PORTRAIT mode
Suits for portrait recordings. Backgrounds blurred away, and the frontward person is sharpened.

4 Set the mode dial to SCN.
The selected setting is loaded.

To cancel the SCENE SELECTION function

Set the mode dial to 📷, S, A, M, 🎞, or [▶].

Notes

- You can focus only on distant subjects in LANDSCAPE mode.
- Set the forced flash ⚡ when you use the flash in the following modes:
  - — TWILIGHT mode
  - — LANDSCAPE mode
- When using the SCENE SELECTION mode, the AF illuminator (page 25) does not emit in the following conditions:
  - — TWILIGHT mode: when the flash mode is not set to the ⚡ forced flash mode
  - — LANDSCAPE mode: you cannot use the AF illuminator.

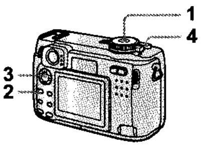
Tips

Under normal recording conditions, the camera automatically makes various adjustments, such as those for the focus, iris, exposure, and white balance, as it shoots. However, you may not be able to carry out your desired shooting depending on shooting conditions. The SCENE SELECTION function provides you with near-optimum adjustments to suit your shooting situation.

Recording two or three images continuously

Mode dial: 📷/S/A/M/SCN

You can continuously record two images with DSC-S75 and three images with DSC-S85.



1 Set the mode dial to 📷, S, A, M or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [BURST3] (DSC-S85 only) or [BURST2] (DSC-S75 only) with ▲/▼.

4 Record the image.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

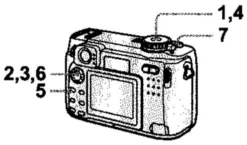
Notes

- You cannot use the flash in this mode.
- During recording in this mode, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- The recording interval is approximate 0.6 second.
- You cannot select a shutter speed slower than 1" when recording images continuously.

Recording three images with the exposure shifted (DSC-S85 only) (EXP BRKTG)

Mode dial: 📷/S/A/M/SCN

The camera continuously records three images with each exposure value shifted. The exposure compensation value can be set between ±1.0EV from the correct exposure value by 1/3 step.



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [📷] (CAMERA) with ▲/▼, [BRACKET STEP] with ▶/▲/▼, then press ▶.

3 Select the desired bracket step value, then press ●.
±1.0EV: Shifts the exposure value by plus or minus 1.0EV.
±0.7EV: Shifts the exposure value by plus or minus 0.7EV.
±0.3EV: Shifts the exposure value by plus or minus 0.3EV.

4 Set the mode dial to 📷, S, A, M, or SCN.

5 Press MENU.
The menu appears.

6 Select [MODE] (REC MODE) with ◀/▶, [EXP BRKTG] with ▲/▼.

7 Record the image.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **6**.

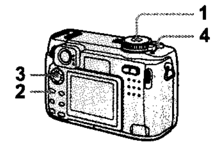
Notes

- You cannot use the flash in this mode.
- During recording, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- Focus and white balance are adjusted for the first image and these settings are also used for the other images.
- When the exposure is manually adjusted, the adjusted value is used for the center value.
- The recording interval is approximate 0.6 second.
- You cannot select a shutter speed slower than 1" when recording images continuously.

Recording still images for e-mail (E-MAIL)

Mode dial: 📷/S/A/M/SCN

In the E-MAIL mode, a small-size image which is suitable for e-mail transmission is also recorded at the same time as recording a normal still image. (The size of the normal still image is set using [▦] (IMAGE SIZE) in the menu settings (page 48).)



1 **Set the mode dial to 📷, S, A, M or SCN.**
2 **Press MENU.**
The menu appears.
3 **Select [MODE] (REC MODE) with ◀/▶, [E-MAIL] with ▲/▼.**
4 **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB or 16 MB)* in E-MAIL mode

Image size	Quality	
	STANDARD	FINE
2272×1704 (DSC-S85 only)	Approx. 7 (14)	Approx. 3 (7)
2272 (3:2) (DSC-S85 only)	Approx. 7 (14)	Approx. 3 (7)
2048×1536 (DSC-S75 only)	Approx. 8 (17)	Approx. 4 (9)
2048 (3:2) (DSC-S75 only)	Approx. 8 (17)	Approx. 4 (9)
1600×1200	Approx. 14 (28)	Approx. 8 (16)
1280×960	Approx. 21 (42)	Approx. 12 (24)
640×480	Approx. 95 (192)	Approx. 43 (87)

* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).

Remaining number of recordable images (page 99)

The actual number of remaining images may differ depending on the recording conditions.

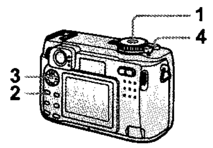
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Adding audio files to still images (VOICE)

Mode dial: 📷/S/A/M/SCN

In the VOICE mode, the audio is also recorded at the same time as recording a still image. You can vividly record the situation with audio.



1 **Set the mode dial to 📷, S, A, M or SCN.**
2 **Press MENU.**
The menu appears.
3 **Select [MODE] (REC MODE) with ◀/▶, [VOICE] with ▲/▼.**
4 **Record the image.**
If you press and release the shutter button, sound is recorded for five seconds.
If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a "Memory Stick" (8 MB or 16 MB)* in VOICE mode**

Image size	Quality	
	STANDARD	FINE
2272×1704 (DSC-S85 only)	Approx. 7 (13)	Approx. 3 (7)
2272 (3:2) (DSC-S85 only)	Approx. 7 (13)	Approx. 3 (7)
2048×1536 (DSC-S75 only)	Approx. 8 (16)	Approx. 4 (9)
2048 (3:2) (DSC-S75 only)	Approx. 8 (16)	Approx. 4 (9)
1600×1200	Approx. 13 (26)	Approx. 7 (14)
1280×960	Approx. 19 (38)	Approx. 11 (22)
640×480	Approx. 56 (120)	Approx. 34 (68)

* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).

** When recording 5-second audio.

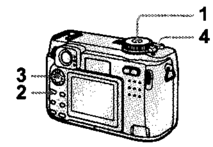
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Recording text documents (TEXT)

Mode dial: 📷

The TEXT mode is suitable for recording a document to emphasize its character by the black and white colors. The LCD screen also turns to black and white, and the image is recorded in the GIF format.



1 **Set the mode dial to 📷.**
2 **Press MENU.**
The menu appears.
3 **Select [MODE] (REC MODE) with ◀/▶, [TEXT] with ▲/▼.**
4 **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB or 16MB) in TEXT mode*

Image size	Number of images	
	8 MB	16 MB
2272×1704 (DSC-S85 only)	12–88	23–161
2272 (3:2) (DSC-S85 only)	13–97	26–161
2048×1536 (DSC-S75 only)	14–108	28–193
2048 (3:2) (DSC-S75 only)	16–108	32–193
1600×1200	24–138	46–241
1280×960	36–162	69–241
640×480	121–323	193–483

* The maximum number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

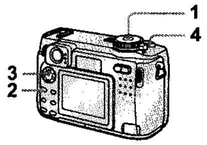
Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Writing and reading data take more time than normal recording.
- When the mode dial is set to S, A, M, or SCN images can be recorded, but the image may be bleached out or may be turned black.
- Remaining number of recordable images is not displayed.
- The number of recordable images is the same regardless of whether [◀:·] (P. QUALITY) is set to STANDARD or FINE.

Recording still images as uncompressed files (TIFF)

Mode dial: 📷/S/A/M/SCN

Records the images without compression, so the image does not deteriorate. Images recorded in this mode are suitable for printing with a high-quality image. The JPEG (compressed) format image is also recorded with the TIFF format image.



1 **Set the mode dial to 📷, S, A, M or SCN.**
2 **Press MENU.**
The menu appears.
3 **Select [MODE] (REC MODE) with ◀/▶, [TIFF] with ▲/▼.**
4 **Record the image.**
The number of images that you can record on a "Memory Stick" (16 MB) in TIFF mode is approx. 1.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

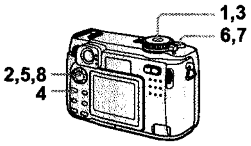
Notes

- JPEG images are recorded in the image size selected by the [▦] (IMAGE SIZE) menu (page 48). TIFF images are recorded in [2272×1704] (DSC-S85) or [2048×1536] (DSC-S75) size other than when [2272 (3:2)] (DSC-S85) or [2048 (3:2)] (DSC-S75) is selected.
- Writing data takes more time than in normal recording.
- The "Memory Stick" (8 MB) does not have sufficient capacity to record uncompressed images.

Creating Clip Motion Files

Mode dial: 🎞

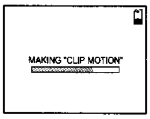
Clip Motion is an animation function that plays back still images in succession. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.



1. **Set the mode dial to SET UP.**
   The setup screen appears.
2. **Select [📷] (CAMERA) with ▲/▼, [MOVING IMAGE] with ▶/▲/▼, [CLIP MOTION] with ▲/▼, then press ●.**
3. **Set the mode dial to 🎞.**
4. **Press MENU.**
   The menu appears.
5. **Select [▦] (IMAGE SIZE) with ◀/▶, the desired mode with ▲/▼.**

   NORMAL (160×120)
   Clip Motion of up to 10 frames can be recorded. This is suitable for use on home pages, etc.

   MOBILE (80×72)
   Clip Motion of up to 2 frames can be recorded. This is suitable for use with portable data terminals.
6. **Record the image for the first frame.**


MAKING "CLIP MOTION"

   Before carrying out step **8**, the images are temporarily stored in memory. These images are not recorded on the "Memory Stick", yet.
7. **Record the image for the next frame.**
   Image recording can be repeated up to the maximum number of recordable frames.
8. **Press ●.**
   All the frame images are recorded on the "Memory Stick".

To delete some or all the frame images while making a Clip Motion recording

① Press the control button ◀ (⊜) in step **6** or **7**.
The recorded frame images are played back in turn and stop at the last image.
② Press MENU, and select [DELETE LAST] or [DELETE ALL], then press ●.
③ Select [OK], then press ●.
When [DELETE LAST] is selected in step ②, each time you repeat steps ① through ③, the recorded frame is deleted from the newest one.

The number of Clip Motion frames that you can record on a "Memory Stick" (8 MB or 16 MB)*

Image size	Number of images
NORMAL (160×120)	Approx. 40 (80)**
MOBILE (80×72)	Approx. 350 (450)

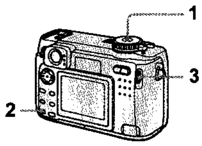
* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).
** When recording 10 frames per Clip Motion file

Notes
- You cannot change the image size partway through a Clip Motion recording.
- Reading and writing data take more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.
- All the frame images are immediately recorded on the "Memory Stick" if the mode dial is switched or the power is turned off.

Setting the distance to the subject

Mode dial: 📷/S/A/M/SCN/🎞

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.



1. **Set the mode dial to 📷, S, A, M, SCN or 🎞.**
2. **Press FOCUS.**
   The focus is fixed and the ⊛ (manual focus) indicator appears.
3. **Turn the jog dial to select the desired focus setting.**
   You can select from 15 focus settings (unit: m) including the ⊛ position:
   0.1, 0.2, 0.3, 0.5, 0.8, 1.0, 1.5, 2.0, 3.0, 5.0, 7.0, 10.0, 15.0 and ∞ (infinity)

To reactivate auto focusing

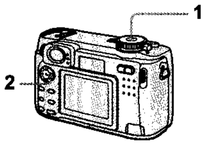
Press FOCUS again and the focal point information disappears.

Notes
- Focal point information may not completely show the correct distance. Use the information as a guide.
- The focus preset cannot be set when attaching a conversion lens.
- Focusing error increases if the lens is pointed up or down.
- If you shoot a subject within 0.2 m (7 7/8 inches) while the zoom is set to the T side, you cannot get a clear focus. In such cases, the focal point information flashes. Press the zoom W button until the indicator stops flashing.

Recording images in macro

Mode dial: 📷/S/A/M/SCN/🎞

The macro recording is used when zooming up a little subject, such as flowers, insects.



1. **Set the mode dial to 📷, S, A, M, SCN or 🎞.**
2. **Clear the menu, and press the control button ▶ (🌷).**
   The 🌷 (macro) indicator appears on the LCD screen.
   You can record a subject as close as about 4 cm (1 5/8 inches) from the lens surface with the zoom set all the way to the W side, or about 20 cm (8 inches) with the zoom set all the way to the T side.

To return to normal recording mode

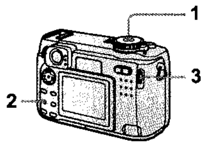
Press the control button ▶ (🌷) again. The 🌷 indicator disappears.

Notes
- You cannot record images in macro with the LANDSCAPE mode of the SCENE SELECTION function.
- When recording images in macro, use the LCD screen. If you record using the finder, the range visible in the finder may differ from the actual recording range.

Adjusting the exposure (EXPOSURE)

Mode dial: 📷/S/A/SCN/🎞

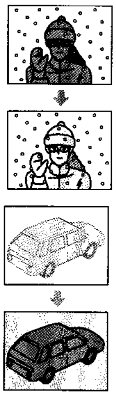
Adjusts the exposure value which is set in the automatic adjustment.



1. **Set the mode dial to 📷, S, A, SCN or 🎞.**
2. **Press ◩.**
3. **Select the desired exposure value with the jog dial.**
   Adjust the exposure value while checking the brightness of the background.
   You can select values ranging from +2.0 EV to –2.0 EV in steps of 1/3 EV.

Note
If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

Tips
Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as illustrated below, we recommend that you adjust the exposure manually. When recording a backlighted subject or a subject in the snow, set it toward +, and when recording a dark subject with fully displayed on the LCD screen, set it toward –.

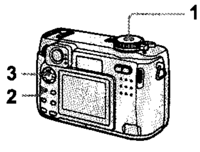

Set the exposure toward +

Set the exposure toward –

Adjusting the white balance (WHITE BALANCE)

Mode dial: 📷/S/A/M/SCN/🎞

Normally, the white balance is automatically adjusted (AUTO). When you record with the shooting condition fixed or under the specific lighting condition, you can manually adjust the white balance.



1. **Set the mode dial to 📷, S, A, M, SCN or 🎞.**
2. **Press MENU.**
   The menu appears.
3. **Select [WB] (WHITE BAL) with ◀/▶, the desired setting with ▲/▼.**

   ONE PUSH (⛶)
   Adjusting the white balance depending on the light source

   AUTO (No indicator)
   Adjusts the white balance automatically
   Under fluorescent lighting

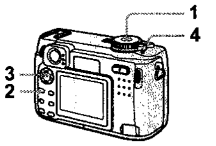
   IN DOOR (☼)
   - Places where the lighting condition changes quickly
   - Under bright lighting such as photography studios
   - Under sodium or mercury lamps

   OUT DOOR (☀)
   Recording a sunrise/sunset, night scene, neon signs, or fireworks

Recording still images for e-mail (E-MAIL)

Mode dial: 📷/S/A/M/SCN

In the E-MAIL mode, a small-size image which is suitable for e-mail transmission is also recorded at the same time as recording a normal still image. (The size of the normal still image is set using [▦] (IMAGE SIZE) in the menu settings (page 48).)



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◄/►, [E-MAIL] with ▲/▼.**
4. **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB or 16 MB)* in E-MAIL mode

Image size	Quality	
	STANDARD	FINE
2272×1704 (DSC-S85 only)	Approx. 7 (14)	Approx. 3 (7)
2272 (3:2) (DSC-S85 only)	Approx. 7 (14)	Approx. 3 (7)
2048×1536 (DSC-S75 only)	Approx. 8 (17)	Approx. 4 (9)
2048 (3:2) (DSC-S75 only)	Approx. 8 (17)	Approx. 4 (9)
1600×1200	Approx. 14 (28)	Approx. 8 (16)
1280×960	Approx. 21 (42)	Approx. 12 (24)
640×480	Approx. 95 (192)	Approx. 43 (87)

* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).

Remaining number of recordable images (page 99)

The actual number of remaining images may differ depending on the recording conditions.

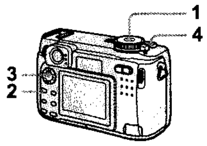
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Adding audio files to still images (VOICE)

Mode dial: 📷/S/A/M/SCN

In the VOICE mode, the audio is also recorded at the same time as recording a still image. You can vividly record the situation with audio.



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◄/►, [VOICE] with ▲/▼.**
4. **Record the image.**
   If you press and release the shutter button, sound is recorded for five seconds.
   If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a "Memory Stick" (8 MB or 16 MB)* in VOICE mode**

Image size	Quality	
	STANDARD	FINE
2272×1704 (DSC-S85 only)	Approx. 7 (13)	Approx. 3 (7)
2272 (3:2) (DSC-S85 only)	Approx. 7 (13)	Approx. 3 (7)
2048×1536 (DSC-S75 only)	Approx. 8 (16)	Approx. 4 (9)
2048 (3:2) (DSC-S75 only)	Approx. 8 (16)	Approx. 4 (9)
1600×1200	Approx. 13 (26)	Approx. 7 (14)
1280×960	Approx. 19 (38)	Approx. 11 (22)
640×480	Approx. 56 (120)	Approx. 34 (68)

* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).

** When recording 5-second audio.

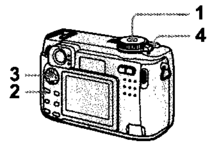
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Recording text documents (TEXT)

Mode dial: 📷

The TEXT mode is suitable for recording a document to emphasize its character by the black and white colors. The LCD screen also turns to black and white, and the image is recorded in the GIF format.



1. **Set the mode dial to 📷.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◄/►, [TEXT] with ▲/▼.**
4. **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB or 16MB) in TEXT mode*

Image size	Number of images	
	8 MB	16 MB
2272×1704 (DSC-S85 only)	12–88	23–161
2272 (3:2) (DSC-S85 only)	13–97	26–161
2048×1536 (DSC-S75 only)	14–108	28–193
2048 (3:2) (DSC-S75 only)	16–108	32–193
1600×1200	24–138	46–241
1280×960	36–162	69–241
640×480	121–323	193–483

* The maximum number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

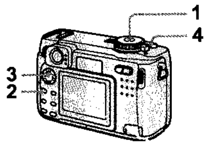
Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Writing and reading data take more time than normal recording.
- When the mode dial is set to S, A, M, or SCN images can be recorded, but the image may be bleached out or may be turned black.
- Remaining number of recordable images is not displayed.
- The number of recordable images is the same regardless of whether [◀⁝·] (P. QUALITY) is set to STANDARD or FINE.

Recording still images as uncompressed files (TIFF)

Mode dial: 📷/S/A/M/SCN

Records the images without compression, so the image does not deteriorate. Images recorded in this mode are suitable for printing with a high-quality image. The JPEG (compressed) format image is also recorded with the TIFF format image.



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◄/►, [TIFF] with ▲/▼.**
4. **Record the image.**
   The number of images that you can record on a "Memory Stick" (16 MB) in TIFF mode is approx. 1.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

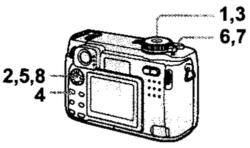
Notes

- JPEG images are recorded in the image size selected by the [▦] (IMAGE SIZE) menu (page 48). TIFF images are recorded in [2272×1704] (DSC-S85) or [2048×1536] (DSC-S75) size other than when [2272 (3:2)] (DSC-S85) or [2048 (3:2)] (DSC-S75) is selected.
- Writing data takes more time than in normal recording.
- The "Memory Stick" (8 MB) does not have sufficient capacity to record uncompressed images.

Creating Clip Motion Files

Mode dial: 🎞

Clip Motion is an animation function that plays back still images in succession. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.



1 **Set the mode dial to SET UP.**
The setup screen appears.

2 **Select [📷] (CAMERA) with ▲/▼, [MOVING IMAGE] with ▶/▲/▼, [CLIP MOTION] with ▲/▼, then press ●.**

3 **Set the mode dial to 🎞.**

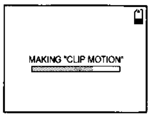
4 **Press MENU.**
The menu appears.

5 **Select [▦] (IMAGE SIZE) with ◀/▶, the desired mode with ▲/▼.**

NORMAL (160×120)
Clip Motion of up to 10 frames can be recorded. This is suitable for use on home pages, etc.

MOBILE (80×72)
Clip Motion of up to 2 frames can be recorded. This is suitable for use with portable data terminals.

6 **Record the image for the first frame.**



Before carrying out step **8**, the images are temporarily stored in memory. These images are not recorded on the "Memory Stick", yet.

7 **Record the image for the next frame.**
Image recording can be repeated up to the maximum number of recordable frames.

8 **Press ●.**
All the frame images are recorded on the "Memory Stick".

To delete some or all the frame images while making a Clip Motion recording

① Press the control button ◀ (⊜) in step **6** or **7**.
The recorded frame images are played back in turn and stop at the last image.

② Press MENU, and select [DELETE LAST] or [DELETE ALL], then press ●.

③ Select [OK], then press ●.
When [DELETE LAST] is selected in step ②, each time you repeat steps ① through ③, the recorded frame is deleted from the newest one.

The number of Clip Motion frames that you can record on a "Memory Stick" (8 MB or 16 MB)*

Image size	Number of images
NORMAL (160×120)	Approx. 40 (80)**
MOBILE (80×72)	Approx. 350 (450)

* The numbers in the parentheses indicate the number of images or the amount of recordable time on a "Memory Stick" (16 MB).

** When recording 10 frames per Clip Motion file

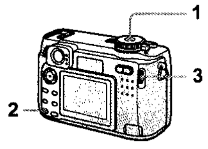
Notes

- You cannot change the image size partway through a Clip Motion recording.
- Reading and writing data take more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.
- All the frame images are immediately recorded on the "Memory Stick" if the mode dial is switched or the power is turned off.

Setting the distance to the subject

Mode dial: 📷/S/A/M/SCN/🎞

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.



1 **Set the mode dial to 📷, S, A, M, SCN or 🎞.**

2 **Press FOCUS.**
The focus is fixed and the Ⓕ (manual focus) indicator appears.

3 **Turn the jog dial to select the desired focus setting.**
You can select from 15 focus settings (unit: m) including the Ⓕ position:
0.1, 0.2, 0.3, 0.5, 0.8, 1.0, 1.5, 2.0, 3.0, 5.0, 7.0, 10.0, 15.0 and ∞ (infinity)

To reactivate auto focusing

Press FOCUS again and the focal point information disappears.

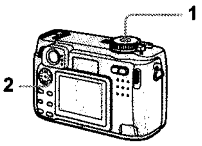
Notes

- Focal point information may not completely show the correct distance. Use the information as a guide.
- The focus preset cannot be set when attaching a conversion lens.
- Focusing error increases if the lens is pointed up or down.
- If you shoot a subject within 0.2 m (7 7/8 inches) while the zoom is set to the T side, you cannot get a clear focus. In such cases, the focal point information flashes. Press the zoom W button until the indicator stops flashing.

Recording images in macro

Mode dial: 📷/S/A/M/SCN/🎞

The macro recording is used when zooming up a little subject, such as flowers, insects.



1 **Set the mode dial to 📷, S, A, M, SCN or 🎞.**

2 **Clear the menu, and press the control button ▶ (🌷).**
The 🌷 (macro) indicator appears on the LCD screen.
You can record a subject as close as about 4 cm (1 5/8 inches) from the lens surface with the zoom set all the way to the W side, or about 20 cm (8 inches) with the zoom set all the way to the T side.

To return to normal recording mode

Press the control button ▶ (🌷) again.
The 🌷 indicator disappears.

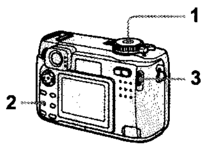
Notes

- You cannot record images in macro with the LANDSCAPE mode of the SCENE SELECTION function.
- When recording images in macro, use the LCD screen. If you record using the finder, the range visible in the finder may differ from the actual recording range.

Adjusting the exposure (EXPOSURE)

Mode dial: 📷/S/A/SCN/🎞

Adjusts the exposure value which is set in the automatic adjustment.



1 **Set the mode dial to 📷, S, A, SCN or 🎞.**

2 **Press ±.**

3 **Select the desired exposure value with the jog dial.**
Adjust the exposure value while checking the brightness of the background.
You can select values ranging from +2.0 EV to −2.0 EV in steps of 1/3 EV.

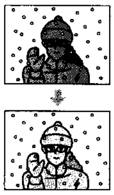
Note

If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

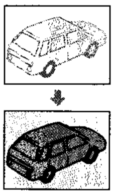
Tips

Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as illustrated below, we recommend that you adjust the exposure manually. When recording a backlighted subject or a subject in the snow, set it toward +, and when recording a dark subject with fully displayed on the LCD screen, set it toward −.

Set the exposure toward +



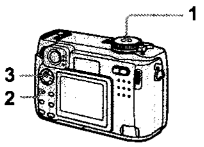
Set the exposure toward −



Adjusting the white balance (WHITE BALANCE)

Mode dial: 📷/S/A/M/SCN/🎞

Normally, the white balance is automatically adjusted (AUTO). When you record with the shooting condition fixed or under the specific lighting condition, you can manually adjust the white balance.



1 **Set the mode dial to 📷, S, A, M, SCN or 🎞.**

2 **Press MENU.**
The menu appears.

3 **Select [WB] (WHITE BAL) with ◀/▶, the desired setting with ▲/▼.**

ONE PUSH (⛶)
Adjusting the white balance depending on the light source

AUTO (No indicator)
Adjusts the white balance automatically
Under fluorescent lighting

IN DOOR (💡)
- Places where the lighting condition changes quickly
- Under bright lighting such as photography studios
- Under sodium or mercury lamps

OUT DOOR (☀)
Recording a sunrise/sunset, night scene, neon signs, or fireworks

To shoot in one-push white balance mode

① Select [ONE PUSH]. The ☁ indicator appears.
② Shoot a white object such as paper full under the same situation you will shoot.
③ Press ▲.
The ☁ indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

To reactivate auto adjustment

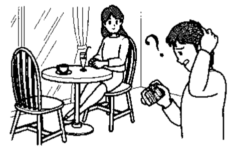
Select [AUTO] with ▲/▼ in step **3**.

Notes

- The ☁ indicator means:
  Slow flashing: white balance is not set or was not able to be set.
  Quick flashing: white balance is being adjusted (after you pressed ▲).
  Lit steady: white balance has been set.
- If the ☁ indicator keeps flashing even when you press ▲, record in automatic white balance mode.

Tips

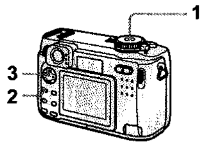
The image is susceptible to lighting conditions. The image looks blue under sunlight in the summer, and looks red under mercury lamps. Human eyes can resolve these problems. However, the camera cannot resolve the problem without making adjustments. Normally, the camera adjusts it automatically, but, if the image appears in strange colors, we recommend that you change the white balance mode.



Enjoying picture effects (P. EFFECT)

Mode dial: 📷/S/A/M/SCN/🎞

You can digitally process images to obtain special effect.



1 Set the mode dial to 📷, S, A, M, SCN or 🎞.

2 Press MENU.
The menu appears.

3 Select [PFX] (P. EFFECT) with ◄/►, the desired mode with ▲/▼.

SOLARIZE
The light contrast is clearer and the picture looks like an illustration.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia-toned like an old photograph.

NEG.ART
The color and brightness of the picture are reversed as in a negative.

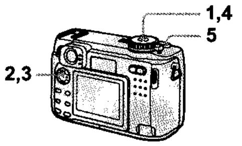
OFF
Does not use the picture effect function.

To cancel picture effect

Select [OFF] with ▲/▼ in step **3**.

Recording the date and time on the still image (DATE/TIME)

Mode dial: 📷/S/A/M/SCN



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [📷] (CAMERA) with ▲/▼, [DATE/TIME] with ►/▲/▼, then press ►.

3 Select the date and time setting with ▲/▼, then press ●.

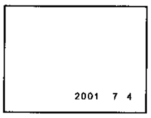
DAY & TIME
Imposes the date, hour, and minute.

DATE
Imposes the year, month, and day.

OFF
Does not impose the date and time.

4 Set the mode dial to 📷, S, A, M, or SCN.

5 Record the image.
The date and time do not appear on the LCD screen during shooting. These appear during playback only.



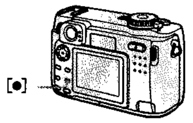
Notes

- If you select [DATE] in step **3**, the date is imposed onto the image in the order selected with "Setting the date and time" (page 15).
- The date and time are not superimposed onto moving images or Clip Motion images.

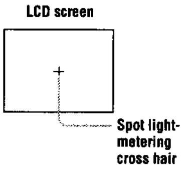
Using the spot light-metering function

Mode dial: 📷/S/A/M/SCN/🎞

Use this function when there is backlight or when there is strong contrast between the subject and the background, etc. Position the point you want to record on the spot light-metering cross hair.



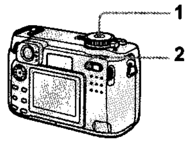
Press [●] to activate the spot light-metering function.
Position the point you want to record at the spot light-metering cross hair. Record the picture when the automatic adjustment has been completed.



Playing back three or nine images at once

Mode dial: ▶

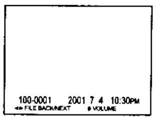
You can display multiple images on the LCD screen at one time using the zoom buttons.



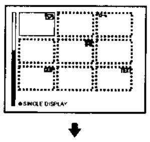
1 Set the mode dial to ▶.

2 Press the zoom W button repeatedly.
The LCD screen display changes as follows:

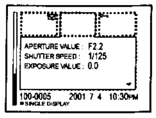
- Single (single-image) screen



- Index (nine-image) screen



- Triple-image screen



The image indicated by the yellow frame in the index screen is displayed in the middle of the triple-image screen with the recording information. To display the other information, press the control button ▲/▼.

The following marks are displayed on each image according to the image type and settings.
🎞 : Moving image file
[♪]: VOICE mode file
✉ : E-mail file
🖨 : Print mark
⊶ : Protect mark
TEXT: TEXT file
TIFF: TIFF file
CLIP: Clip Motion file
(No mark): Normal recording (no settings)

To display the next (previous) index screen

Press the control button ▲/▼/◄/►.

To return to normal playback (single-image)

- Press the zoom T button repeatedly.
- Press the control button ●.

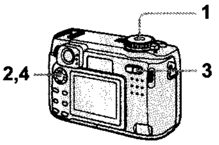
Note

When viewing an image recorded in Clip Motion or TEXT mode on the index screen, the image may appear different from the actual image.

Tips
When the triple-image screen is displayed, pressing MENU opens the menu including [PRINT], [PROTECT], and [DELETE]. For details on these items, see pages 71, 72, or 76. To close the menu, press MENU again. The menu disappears and the recording information is indicated.

Enlarging a part of the still image (Zoom and trimming)

Mode dial: ▶



1. **Set the mode dial to ▶.**
2. **Display the image to be enlarged.**
3. **Zoom in/out the image with the zoom T/W buttons.**
4. **Press the control button repeatedly to select the desired portion of the image.**
   ▲: The image moves downward
   ▼: The image moves upward
   ◀: The image moves rightward
   ▶: The image moves leftward

To return to the normal size

Press the control button ●.

To record an enlarged image (trimming)

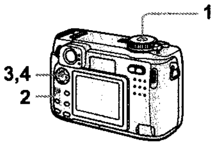
① Press MENU after zooming.
② Select [TRIMMING] with ▶, then press ●.
③ Select the image size with ▲/▼, then press ●.
The image is recorded and the image on the LCD screen returns to the normal size after recording.

Notes
- You cannot zoom moving images.
- You can zoom images recorded in TEXT mode, but cannot trim them.
- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is left even if you enlarge the image.
- The enlarged image is recorded as the newest file.
- If you trim an image, the remaining "Memory Stick" capacity will be decreased.
- If the remaining "Memory Stick" capacity is not sufficient, you may be unable to trim an image.
- You cannot trim to an image of 3:2.
- You cannot trim uncompressed (TIFF) images.

Playing back the still images in order (SLIDE)

Mode dial: ▶

This function is useful for checking the recorded images or for presentations, etc.



1. **Set the mode dial to ▶.**
2. **Press MENU.**
   The menu appears.
3. **Select [SLIDE] with ◀/▶, then press ●.**
   Set the following items.

   INTERVAL
   You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), 5 sec (5 seconds), or 3 sec (3 seconds).

   REPEAT
   ON: Plays back images in a continuous loop.
   OFF: After all images have been played back, the slide show ends.
4. **Select [START] with ▲/▼/◀/▶, then press ●.**
   The slide show begins.

To cancel the SLIDE SHOW setting

Select [CANCEL] with ▲/▼/◀/▶ in step **3**, then press ●.

To stop the SLIDE SHOW playback

Press ●, select [EXIT] with ▶, then press ●.

To skip to the next/previous image during the SLIDE SHOW

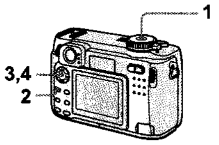
Press ▶ (next) or ◀ (previous).

Note
The interval setting time may vary depending on the image size.

Rotating a still image (ROTATE)

Mode dial: ▶

You can rotate the image recorded in portrait orientation and display it in landscape orientation.



1. **Set the mode dial to ▶, and display the image to rotate.**
2. **Press MENU.**
   The menu appears.
3. **Select [ROTATE] with ◀/▶, then press ●.**
4. **Select [↶ , ↷] with ▲/▼, then rotate the image with ◀/▶. Select [OK] with ▲/▼, then press ●.**

To cancel rotation

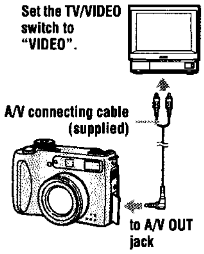
Select [CANCEL] with ▲/▼ in step **4**, then press ●.

Notes
- You cannot rotate protected or uncompressed images, or images recorded in TEXT mode.
- You may not be able to rotate images recorded with other equipment.
- Also, when viewing images on a computer, the image rotation information may not be reflected depending on the application software.

Viewing images on a TV screen

Mode dial: ▶

Before connecting your camera, be sure to turn off the TV.


Set the TV/VIDEO switch to "VIDEO".
A/V connecting cable (supplied)
to A/V OUT jack

1. **Connect the A/V connecting cable to the A/V OUT jack of your camera and to the audio/video input jacks of the TV.**
   If your TV has stereo type input jacks, connect the audio plug (black) of the A/V connecting cable to the Lch jack.
2. **Turn on the TV and start playback on your camera.**
   The playback image appears on the TV screen.

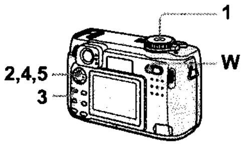
Notes
- You cannot use a TV that has an antenna (aerial) connector only.
- When viewing a still image on the TV, the black band may appear around the image.

Deleting images (DELETE)

Mode dial: ▶

You can delete unwanted files.

In single-image or triple-image mode



1 **Set the mode dial to ▶.**

2 **In single-image mode:**
Display the image you want to delete with ◀/▶.

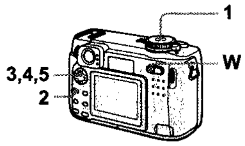
In triple-image mode:
Press the zoom W button twice in the single-image mode to turn to the triple-image mode. Display the image you want to delete with ◀/▶.

3 **Press MENU.**
The menu appears.

4 **Select [DELETE] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**

5 **Select [OK] with ▲/▼, then press ●.**
The image (or the middle-positioned image in triple-image mode) is deleted.

In index mode



1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

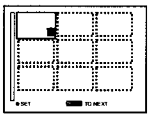
2 **Press MENU.**
The menu appears.

3 **Select [DELETE] with ◀/▶, then press ●.**

4 **Select [ALL] or [SELECT] with ◀/▶, then press ●.**

5 **When you select [ALL]**
Select [ENTER] with ◀/▶, then press ●.
All the unprotected images are deleted.

When you select [SELECT]
The frame of the selected image turns green.
① Select the images to be deleted with the control button, then press ●.
To cancel, press ● again.
Repeat this step to select other images.
The 🗑 (delete) indicator appears on the selected images.



② Press MENU.
③ Select [OK] with ◀/▶, then press ●.

To cancel deleting

Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

Note

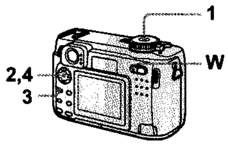
If there are files on the "Memory Stick" with names having the same last 4 digits as the file name of the image to be deleted, these files are also deleted at the same time.

Preventing accidental erasure (PROTECT)

Mode dial: ▶

Protects images against accidental erasure.

In single-image or triple-image mode



1 **Set the mode dial to ▶.**

2 **In single-image mode**
Display the image you want to protect with ◀/▶.

In triple-image mode
Press the zoom W button twice in the single-image mode to turn to the triple-image mode.
Display the image you want to protect with ◀/▶.

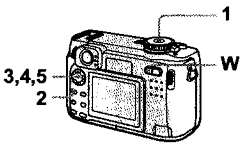
3 **Press MENU.**
The menu appears.

4 **Select [PROTECT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**
The displayed image (or the middle-positioned image in triple-image mode) is protected.
The ⊶ indicator appears on the image.

To release protection

Press ● again in step **4**. ⊶ indicator disappears.

In index mode



1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

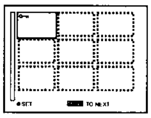
2 **Press MENU.**
The menu appears.

3 **Select [PROTECT] with ◀/▶, then press ●.**

4 **Select [ALL] or [SELECT] with ◀/▶, then press ●.**

5 **When you select [ALL]**
Select [ON] with ◀/▶, then press ●.
All the images in the "Memory Stick" are protected.

When you select [SELECT]
The frame of the selected image turns green.
① Select the images to be protected with the control button, then press ●.
To cancel, press ● again.
Repeat this step to select other images.
The ⊶ indicator appears on the selected images.



② Press MENU.
③ Select [OK] with ◀/▶, then press ●.

To release protection

If you selected [ALL] in step **4**, select [OFF] with ◀/▶, then press ●. If you selected [SELECT] in step **4**, select the images to be unprotected with ▲/▼/◀/▶, then press ●. Repeat this step to select other images. When you have selected all the images to be unprotected, press MENU and select [OK] with ◀/▶, then press ●.

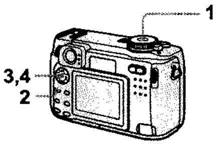
To cancel protection

Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

Changing the recorded still image size (RESIZE)

Mode dial: ▶

You can change the image size of the recorded image.



1 **Set the mode dial to ▶, then display the image of which you want to change the size.**

2 **Press MENU.**
The menu appears.

3 **Select [RESIZE] with ◀/▶, then press ●.**

4 **Select the desired size with ▲/▼, then press ●.**
2272×1704 (DSC-S85 only), 2048×1536 (DSC-S75 only), 1600×1200, 1280×960, 640×480
The resized image is recorded.

To cancel changing the size

Select [CANCEL] with ▲/▼ in step **4**, then press ●.

Notes

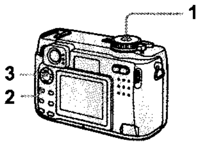
- The original image is retained even after resizing.
- You cannot change the size of images recorded in TEXT mode, moving images, uncompressed images, or Clip Motion images.
- The resized image is recorded as the newest file.
- If you resize an image, the remaining "Memory Stick" capacity will be decreased.
- When you change from a small size to a large size, the picture quality deteriorates.
- If the remaining "Memory Stick" capacity is not sufficient, you may not be able to resize an image.
- You cannot resize to an image of 3:2.
- When you resize a 3:2 image, the upper and lower black portions are displayed on the LCD screen.

Copying images (COPY)

Mode dial: ▶

You can copy images to another "Memory Stick."

In single mode



1 **Set the mode dial to ▶, then display the image which you want to copy.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, [OK] with ▲/▼, then press ●.**
"MEMORY STICK ACCESS" appears.

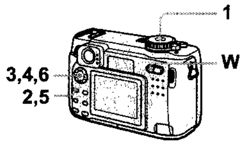
4 **When "CHANGE MEMORY STICK" appears, eject the "Memory Stick."**
"INSERT MEMORY STICK" appears.

5 **Insert the "Memory Stick" on which to copy the image.**
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT] with ▲/▼, then press ●.

To copy the image to another "Memory Stick"

Select [CONTINUE] with ▲/▼, press ●, then repeat steps **4** and **5**.

In index mode

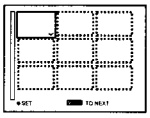


1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, then press ●. Select [Select] with ◀/▶, then press ●.**
The frame of the selected image turns green.

4 **Select the image to copy with the control button, then press ●.**
To cancel, press ● again. Repeat this step to select other images.
The ✓ (select) indicator appears on the image.



5 **Press MENU.**
The menu appears.

6 **Select [OK] with ◀/▶, then press ●.**
"MEMORY STICK ACCESS" appears.

7 **When "CHANGE MEMORY STICK" is displayed, eject the "Memory Stick."**
"INSERT MEMORY STICK" appears.

8 **Insert another "Memory Stick."**
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT] with ▲/▼, then press ●.

To copy the image to another "Memory Stick"

Select [CONTINUE] with ▲/▼ in step **8**, press ●, then repeat steps **7** and **8**.

To cancel copying part-way

Select [CANCEL] with ◀/▶ in step **3** or [EXIT] with ◀/▶ in step **6**, then press ●.

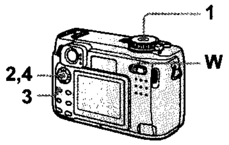
Notes
- If you do not select [EXIT] after "COMPLETE" appears and instead insert a new "Memory Stick," the same image is copied again.
- You cannot copy uncompressed images.
- You cannot copy images that are bigger than 5 MB at once. If "NOT ENOUGH MEMORY" appears or ✓ flashes on the INDEX screen, cancel some images to copy and try again.

Selecting still images to print (PRINT)

Mode dial: ▶

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.

In single-image or triple-image mode



1 **Set the mode dial to ▶.**

2 **In single-image mode**
Display the image you want to print with ◀/▶.

In triple-image mode
Press the zoom W button twice in the single-image mode to turn to the triple-image mode.
Display the image you want to print with ◀/▶.

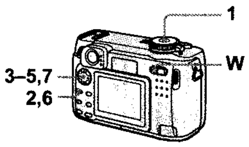
3 **Press MENU.**
The menu appears.

4 **Select [PRINT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**
The 🖨 (print) mark is marked on the displayed image (or the middle-positioned image in triple-image mode).

To unmark the print mark

Press ● again in step **4**. 🖨 mark disappears.

In index mode



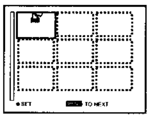
1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

2 **Press MENU.**
The menu appears.

3 **Select [PRINT] with ◀/▶, then press ●.**

4 **Select [SELECT] with ◀/▶, then press ●.**
When marking the 🖨 mark, you cannot select [ALL].
The frame of the selected image turns green.

5 **Select the images to be marked with the control button, then press ●.**
To cancel, press ● again.
Repeat this step to select other images. The 🖨 mark appears on the selected image.



6 **Press MENU.**
The menu appears.

7 **Select [OK] with ◀/▶, then press ●.**

To unmark selected print marks

Select the images to be unmarked in step **5** with the control button, then press ●.

To unmark all the print marks

Select [ALL] with ◀/▶ in step **4**, then press ●. Select [OFF] with ◀/▶, then press ●.
The 🖨 marks on all images are unmarked.

To cancel marking the print mark

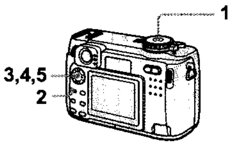
Select [CANCEL] with ◀/▶ in step **4** or select [EXIT] with ◀/▶ in step **7**, then press ●.

Notes
- You cannot mark moving images, Clip Motion images or images recorded in TEXT mode.
- If you mark an image recorded in TIFF mode with a print mark, only the uncompressed image is printed, and the JPEG image recorded at the same time is not printed.
- In E-mail mode, a print mark is marked on the normal size image that is recorded at the same time.

Dividing a moving image file (DIVIDE)

Mode dial: ▶

You can divide moving images recorded in MPEG MOVIE mode. This is convenient when there is not enough space on a "Memory Stick" or when attaching moving images to e-mails.



1 **Set the mode dial to ▶ and display the moving image you want to divide.**

2 **Press MENU.**
The menu appears.

3 **Select [DIVIDE] with ◀/▶, then press ●, select [OK] with ▲/▼, then press ●.**

4 **Play the moving image.**
If you press ● at the divide point, [◀II,II▶] (frame forward, frame reverse), [OK], [CANCEL] and [EXIT] appear on the screen. If you select [◀II,II▶] with ▲/▼, you can finely adjust the divide location using ◀/▶.
If you select [CANCEL], moving image playback restarts and you can reselect the divide location.

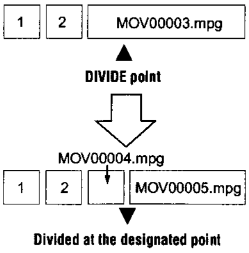
5 **When you have decided the divide point, select [OK] with ▲/▼, then press ●.**

6 **[OK], [CANCEL] and [EXIT] appear on the screen. Select [OK] with ▲/▼, then press ●.**
The moving image file is divided.

You cannot divide the following types of files:
- Clip Motion files
- Still image files
- Moving image files that are too short to divide

The file number changes as follows when you divide a file.

<eg.> If you divide the MOV00003.mpg file, the divided file numbers become MOV00004.mpg and MOV00005.mpg, and MOV00003.mpg is skipped. The divided files are saved as the latest files.



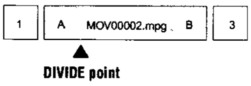
To cancel file division

Press [EXIT]. The image playback screen appears.

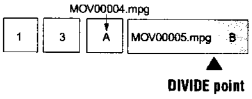
To delete unwanted portions

① Display the portion of the moving image you want to delete and press MENU.
② Select [DELETE] with ◀/▶, then press ●.
③ Select [OK] with ▲/▼, then press ●.

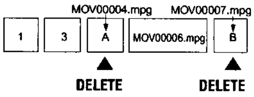
Step 1: Divide the unwanted scene A.



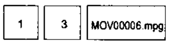
Step 2: Divide the unwanted scene B.



Step 3: Delete the unwanted scenes A and B.



Step 4: Only the desired scene remains.



Notes

- You cannot divide Clip Motion files.
- You cannot recombine divided files.
- The original undivided file is not saved.

Changing the setup settings (SETUP)

Set the mode dial to SET UP. The setup screen appears. You can set up the following items with the control button. Factory settings are indicated with ■.

CAMERA

Item	Setting	Description
SCENE SELECTION	■TWILIGHT LANDSCAPE PORTRAIT	Selects the SCENE SELECTION mode that is assigned to the SCN position (page 52).
MOVING IMAGE	■MPEG MOVIE	Records the MPEG movie (pages 26, 59).
	CLIP MOTION	Records the Clip Motion.
DATE/TIME	DAY & TIME DATE ■OFF	Sets whether to insert the date and time into the image (page 64).
DIGITAL ZOOM	■ON	Uses digital zoom (page 22).
	OFF	Does not use digital zoom.
BRACKET STEP (DSC-S85 only)	±1.0EV ■±0.7EV ±0.3EV	Sets the exposure compensation value when recording three images with each exposure value shifted (page 53)
RED EYE REDUCTION	ON ■OFF	Reduces the red-eye phenomenon (page 24).
AF ILLUMINATOR	■ON OFF	Uses when it is hard to focus on the subject under dark situations (page 25).

SETUP 1

Item	Setting	Description
FORMAT	OK	Formats a "Memory Stick". Note that formatting erases all the information recorded on a "Memory Stick", including even erasure protected images (page 96).
	CANCEL	Cancels formatting of a "Memory Stick".
FILE NUMBER	■SERIES	Assigns numbers to files in sequence even if the "Memory Stick" is changed.
	RESET	Resets the file numbering each time the "Memory Stick" is changed.

Item	Setting	Description
CONVERSION LENS	ON	Sets to "ON" when using the VCL-MHG07 conversion lens (not supplied). At this time, the zoom function does not work and you cannot turn off the LCD screen. Also, note that the VAD-S70 adaptor ring needed to mount the conversion lens to your camera is not sold in some countries and regions.
	■OFF	
言語/ LANGUAGE	■ENGLISH	Displays the menu items in English.
	日本語 /JPN	Displays the menu items in Japanese.
CLOCK SET	OK CANCEL	Sets the date and time (Perform the procedure from step ❸ on page 15).

SETUP 2

Item	Setting	Description
LCD BRIGHTNESS	BRIGHT ■NORMAL DARK	Selects the LCD brightness. This has no effect on the recorded images.
LCD BACKLIGHT	BRIGHT ■NORMAL	Displayed only when using your camera with the battery pack: Selects the brightness of the LCD backlight. Lets you set the brightness of the LCD backlight to [BRIGHT] or [NORMAL]. Selecting [BRIGHT] makes the screen bright and easy to see when using the camera outdoors or in other bright locations, but also uses up the battery charge faster.
BEEP	SHUTTER	Turns on the shutter sound only. (The shutter sound is heard when you press the shutter button.)
	■ON	Turns on the beep/shutter sound (when you press the control button/shutter button).
	OFF	Turns off the beep/shutter sound.
VIDEO OUT	NTSC	Sets the video output signal to NTSC mode (e.g., Japan, the USA) (page 86).
	PAL	Sets the video output signal to PAL mode (e.g., Europe) (page 86).
USB CONNECT	PTP ■NORMAL	Switches the USB mode (page 31).

Item	Setting	Description
DEMO	■ON/STBY OFF	Displayed only when you use your camera with the AC power adaptor. [DEMO] is set to [STBY] at the factory and the demonstration starts about 10 minutes after you have set the mode dial to 📷, S, A, or M. To cancel the demonstration, turn off the power.

Notes on [DATE/TIME]

- The date and time do not appear on the LCD screen during shooting. These appear during playback.
- The date and time are not superimposed onto moving images and Clip Motion images.

Precautions

On cleaning

Cleaning the LCD screen

Wipe the screen surface with a cleaning cloth (not supplied) or a LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzine as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations

Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

Note on operating temperature

Your camera is designed for use between the temperatures of 0°C and 40°C (32°F and 104°F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:

- The camera is brought from a cold location such as a ski slope into a warmly heated room.
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation

When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs

Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On AC power adaptor

- Unplug the unit from the wall outlet (mains) when you are not using the unit for a long time.
- To disconnect the power cord (mains lead), pull it out by the plug. Never pull the power cord (mains lead) itself.
- Do not operate the unit with a damaged cord (mains lead) or if the unit has been dropped or damaged.
- Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM reception and video operation are disturbed.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - — Extremely hot or cold
  - — Dusty or dirty
  - — Very humid
  - — Vibrating

On battery pack

- Use only the specified charger with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Install the battery pack to the camera securely.
- Charging while some capacity remains does not affect the original battery capacity.

If any problem occurs, unplug your camera and contact your nearest Sony dealer.

On internal rechargeable button battery

This camera has an internal rechargeable button battery for maintaining the date and time and other settings regardless of whether the power is on or off. This rechargeable button battery is constantly charged as long as you are using the camera. However, if you use the camera for only short periods it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable button battery before using the camera. However, even if this rechargeable button battery is not charged, you can still use the camera as long as you do not record the date and time.

Charging method

Connect the camera to a wall outlet (mains) with the AC power adaptor, or install a charged battery pack, and leave the camera for 24 hours or more with the POWER switch set to OFF.

On "Memory Sticks"

"Memory Stick" is a new compact, portable and versatile IC recording medium with a data capacity that exceeds a floppy disk. "Memory Stick" is specially designed for exchanging and sharing digital data among "Memory Stick" compatible products. Because it is removable, "Memory Stick" can also be used for external data storage.

There are two types of "Memory Sticks": general "Memory Sticks" and "MagicGate Memory Sticks" that are equipped with the MagicGate* copyright protection technology.
You can use both types of "Memory Stick" with your camera. However, because your camera does not support the MagicGate standards, data recorded with your camera is not subject to MagicGate copyright protection.

* MagicGate is copyright protection technology that uses encryption technology.

Notes

- Do not remove the "Memory Stick" while reading or writing data.
- Data may be damaged if:
  - — you remove the "Memory Stick" or turn off your camera while reading or writing data.
  - — you use the "Memory Stick" in a location subject to the effects of static electricity or noise.
- Do not attach any other material than the supplied label on the labeling position.
- Attach the label so that it does not stick out from the proper attachment location.
- When you carry or store the "Memory Stick," put it in its supplied case.
- Do not touch the terminals of a "Memory Stick" with your hand or a metal object.
- Do not strike, bend or drop the "Memory Stick."
- Do not disassemble or modify the "Memory Stick."
- Do not allow the "Memory Stick" to get wet.

"Memory Stick", MEMORY STICK™, "MagicGate Memory Stick" and are trademarks of Sony Corporation.

"MagicGate" and MAGICGATE are trademarks of Sony Corporation.

About "InfoLITHIUM" battery pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC power adaptor.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camera.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the FULL indicator appears, indicating that the battery pack is fully charged. If you charge the battery pack outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, disconnect the AC power adaptor from the DC IN jack on your camera or remove the battery pack.

Effective use of the battery pack

- Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to use the battery pack longer:
  - — Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start taking shots.
- Frequently using the LCD panel or frequently operating the zoom wears out the battery pack faster.
- Be certain to turn the POWER switch to off when not taking shots or playing back on your camera.
- We recommend having spare batteries handy for two or three times the expected shooting time, and make trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.

How to store the battery pack

- If the battery pack will not be used for a long time, use up the battery pack after fully charging it once per year. Remove the battery pack from your camera, then store it in a dry, cool place. This is to maintain the battery pack's functions.
- To use the battery pack up on your camera, leave the POWER switch to on in slide show playback mode until the power goes off.

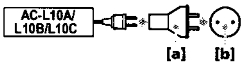
Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. Check the following list:

NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Columbia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system

Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system

Brazil

PAL-N system

Argentina, Paraguay, Uruguay

SECAM system

Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, press the reset button located on the bottom. (If you press the reset button, the date and time setting is cleared.) Should your camera still not operate properly, consult your Sony dealer or local authorized Sony service facility. **If code displays (C:□□:□□) appear on the LCD screen, the self-diagnosis display function is working (page 96).**

Symptom	**Cause and/or Solution**
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack (page 10). • The battery level is low (the 🪫 indicator appears on the LCD screen). → Charge the battery pack (page 11). • The AC power adaptor is not connected securely. → Connect it firmly to the DC IN jack of your camera and a wall outlet (mains) (pages 11, 14). • The built-in microcomputer is not working properly. → Disconnect and then reconnect all power sources after one minute. Then turn the power on by sliding the POWER switch and check that the camera works properly. Press the reset button located on the bottom using a sharp-pointed object.
Your camera cannot record images.	• You cannot record images while charging the flash. • The mode dial is set to ▶ or SET UP. → Set it to 📷, S, A, M, SCN or 🎞 (pages 19, 26). • No "Memory Stick" has been inserted into your camera. → Insert a "Memory Stick" (page 17). • The write-protect tab on the "Memory Stick" is set to LOCK. → Set it to the recording position.
The LCD screen does not light when the power is turned on.	• The power was turned off with the LCD screen set to OFF the last time the camera was used. → The camera retains the settings from the last time it was used. If you turn the power off with the LCD screen set to OFF, the LCD is still set to OFF the next time you turn the power on.

Symptom	**Cause and/or Solution**
The picture is out of focus.	• Your camera is not in macro recording mode when you shoot a subject that is within 50 cm (19 3/4 inches) from the lens. → Set the macro recording mode (page 61). • The LANDSCAPE mode of the SCENE SELECTION function is selected. → Cancel the function. • The focus preset is selected. → Cancel the function (page 60). • [CONVERSION LENS] is set to [ON]. → Set it to [OFF] (page 81).
The resizing function does not work.	• You cannot resize moving images, text images, Clip Motion and uncompressed images.
Images recorded in TEXT mode are blurry.	• Light is not striking the subject evenly. → Adjust so that the lighting strikes the subject evenly.
You cannot record images in TEXT mode.	• The mode dial is set to 🎞. → Set the mode dial to 📷.
You cannot display a print mark.	• You cannot display print marks on moving images, text images and Clip Motion images.
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. → Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. → Adjust the exposure (page 61). • The brightness of the LCD screen is too low. → Adjust the brightness of the LCD screen (page 81).

Symptom	**Cause and/or Solution**
The flash does not work.	• The flash is set to ⊛. → Set the flash to auto (no indicator) or ⚡ (page 24). • The camera is in one of the following SCENE SELECTION modes: TWILIGHT or LANDSCAPE. → Cancel the SCENE SELECTION function (page 52) or set the flash to ⚡. • The mode dial is set to ▶, SETUP or 🎞 (MPEG MOVIE). → Set it to 📷. • [MODE] (REC MODE) is set to [BURST3] or [BRKTG] (DSC-S85 only), or [BURST2] (DSC-S75 only) in the menu settings. → Set it to other modes.
The date and time are recorded incorrectly.	• The date and time are not set correctly. → Set the correct date and time (page 15).
Vertical streaks appear when you are shooting a very bright subject.	• The smear phenomenon is happening. → This is not a malfunction.
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. → Charge the battery pack fully. • The battery pack is dead. → Replace the battery pack with a new one (page 85).
The battery remaining indicator is incorrect. Or sufficient battery remaining indicator is displayed but the power runs out soon.	• You have used the camera for a long time in an extremely hot or an extremely cold location. • The battery pack is dead. → Replace the battery pack with a new one (page 85). • The battery pack is discharged. → Install a charged battery pack (pages 10, 11). • A deviation has occurred in the remaining battery time. → Fully charge the battery pack (page 11).

Symptom	**Cause and/or Solution**
Nothing appears in the display window or the indicators flash during charging.	• The AC power adaptor is disconnected. → Firmly connect the power cord to the wall outlet (page 14). • The battery pack is not installed correctly. → Install the battery pack correctly (page 10). • Charging is completed.
You cannot charge the battery.	• The camera is turned on. → Turn the camera off (page 11).
The POWER ON/OFF (CHG) indicator flashes.	• The battery pack is not installed correctly. → Install the battery pack correctly (page 10). • The battery pack has malfunctioned. → Contact your Sony dealer or local authorized Sony service facility.
The zoom does not work.	• [CONVERSION LENS] in the setup setting is set to [ON]. → Set it to [OFF] (page 81). • The zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE].
Digital zoom does not function.	• The digital zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE], or the LCD screen is OFF. • [DIGITAL ZOOM] is set to [OFF]. → Set [DIGITAL ZOOM] to [ON] in the menu settings.
Your camera cannot play back images.	• The mode dial is set to 📷, 🎞, M, A, S, SCN or SET UP. → Set it to ▶ (pages 28, 29).
The image and sound are interfered by noise when you play back an image on a personal computer.	• You are playing back the file directly from the "Memory Stick." → Copy the file to the hard disk of the personal computer and then play back the file from the hard disk (page 36).
The image cannot be played back on a personal computer.	→ Consult the personal computer or software manufacturer.
Your camera cannot delete an image.	• The image is protected. → Cancel the protection (page 72).

Symptom	Cause and/or Solution
The power turns off suddenly.	• If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery (page 20). → Turn on the camera. • The battery is discharged. → Replace it with a charged battery.
The image does not appear on the TV screen.	• The video output signal setting of your camera is incorrect. → Change the setting (page 81).
A file error occurs when you play back a file.	• The image size is larger than 2272×1704 (DSC-S85) or 2048×1536 (DSC-S75). → Use an image size of 2048×1536 or smaller.
The picture is monochrome (black and white).	• The camera is set to TEXT mode. → Cancel TEXT mode (page 57). • P. EFFECT is set to B&W mode. → Cancel B&W mode (page 63).
The lens does not retract even when the power is turned off.	• The battery is discharged. → Replace it with a fully charged battery or use the AC power adaptor.

Symptom	Cause and/or Solution
Your personal computer does not recognize your camera.	• The battery level is low. → Use the AC power adaptor (page 14). • The camera is turned off. → Turn on the camera. • The USB cable is not connected firmly. → Disconnect the USB cable, and connect it again firmly. Make sure that "USB MODE" is displayed on the LCD screen (pages 33, 35). • The USB connectors on your personal computer are connected to other equipment besides the keyboard, the mouse, and your camera. → Disconnect the USB cables except for the ones connected to the keyboard, the mouse, and your camera. • The USB driver is not installed. → Install the USB driver (page 33). • [USB CONNECT] is set to [PTP] in the setup settings. → Set it to [NORMAL] (page 81). • Since the camera is connected to a computer with the USB cable before installing the USB driver, the drive is not recognized by the computer. → Delete the drive which is not recognized, then install the USB driver. For details, see the procedure on page 93.
No function works though the power is on.	→ Remove the battery pack, then install it again after about one minute. If the function still do not work, press the reset button located on the bottom using a sharp-pointed object. (If you press the reset button, the date and time setting is cleared.)

Reinstall the USB driver when using Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional

Perform all steps without skipping.

1. **Turn on your computer and allow Windows to load.**
2. **Connect the USB jack on the camera and the computer with the supplied USB cable.**
3. **Insert a "Memory Stick".**
4. **Connect the AC power adaptor to your camera and then to a wall outlet (mains), and turn on the power of your camera.**
5. **Open "Device Manager" on Windows.**

   For Windows 98, Windows 98SE and Windows Me users:

   ① Open [Control Panel] from [My Computer], then double-click [System].

   ② "System properties" is displayed. Click the [Device Manager] tab located at the top.

   ③ Click [Sony DSC] in [Other devices], then click the [Delete (E)] button located at the lower-right corner.

   For Windows 2000 Professional users:

   * Log in with the permission of administrator.

   ① Open [Control Panel] from [My Computer], then double-click [System].

   ② "System properties" is displayed. Click the [Hardware] tab located at the top, then click the [Device Manager (D)] button.

   ③ Click [View] in [Device Manager], then click [Devices by type (E)].

   ④ Right-click [Sony DSC] in [Other devices], then click [Delete (E)].
6. **After the message appears to verify that you delete the device, click "OK."**
7. **Turn off the camera, disconnect the USB cable, and restart the computer.**
8. **Install the USB driver in the supplied CD-ROM to the computer following the procedure on page 33.**

Warning and notice messages

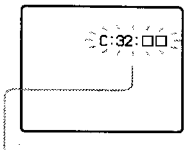
Various messages appear on the LCD screen. Check the corresponding descriptions in the following list.

Message	Meaning
NO MEMORY STICK	No "Memory Stick" has been inserted.
SYSTEM ERROR	Turn the power off and on again.
MEMORY STICK ERROR	• The inserted "Memory Stick" cannot be used with your camera, or is damaged. • The "Memory Stick" is not inserted correctly.
FORMAT ERROR	Failed to format the "Memory Stick."
MEMORY STICK LOCKED	The write-protect tab on the "Memory Stick" is set to the LOCK position.
NO MEMORY SPACE	The capacity of the "Memory Stick" is full, and you cannot record or copy images.
NO FILE	No image has been recorded on the "Memory Stick."
FILE ERROR	An error occurred while playing back the image.
FILE PROTECT	The image is protected against erasure.
for "InfoLITHIUM" battery only	The battery is not the "InfoLITHIUM" type.
NOT ENOUGH MEMORY	The images you want to copy are too big to copy with your camera.
COPY ERROR	Copying was not performed correctly, or the "Memory Stick" was removed during copying.
DIRECTORY ERROR	A directory with the same name already exists on the "Memory Stick".
IMAGE SIZE OVER	You are playing back an image of a size that cannot be played back with your camera.
INVALID OPERATION	You are playing back a file that was created on equipment other than your camera.

Message	Meaning
🪫	The battery level is low or zero. Depending on the conditions of use or the type of battery pack, the indicator may flash even though there is still 5 to 10 minutes of remaining battery time left.
LENS CAP ATTACHED	The lens cap is still attached to the lens.
CANNOT DIVIDE	• The file is not long enough to be divided. • The file is not a moving image.
✋	The shutter speed is too slow. (Mount the camera on a tripod or otherwise secure the camera in place.)
TURN THE POWER OFF AND ON AGAIN	A malfunction occurs on the lens.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four digits of numbers. If this occurs, check the following code chart. The code informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display
- C:□□:□□
  You can reverse the camera malfunction yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony service facility.

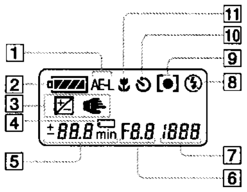
First three digits	Cause and/or Corrective Action
C:32:□□	• There is trouble with your camera's hardware or zooming function. → Turn the power off and on again.
C:13:□□	• An unformatted "Memory Stick" is inserted. → Format the "Memory Stick" (page 80). • The inserted "Memory Stick" cannot be used with your camera, or is damaged. → Insert a new "Memory Stick" (page 17). • The camera cannot read or write data on the "Memory Stick". → Re-insert the "Memory Stick" several times.
E:61:□□ E:91:□□	• A camera malfunction that you cannot reverse has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit service code. (example: E:61:10)

If you are unable to solve the problem even after trying the corrective actions a few times and when the camera is not reset even if you press the reset button located on the bottom, contact your Sony dealer or local authorized Sony service facility.

When a self-diagnosis display appears

The error display appears on the display window (page 98).

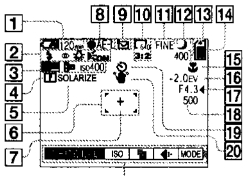
Display window indicators



1. **AE lock indicator**
2. **Battery remaining indicator**
3. **EV indicator/Focus lock indicator**
4. **"Memory Stick" mark**
5. **Remaining number of recordable images indicator (+999 is displayed for 999 or more images)/EV level indicator/Focus distance indicator/Battery usable time indicator (displayed only during charging)/Minutes indicator for the remaining recordable time of moving images**
6. **Aperture value indicator/ Seconds indicator for the remaining recordable time of moving images**
7. **Shutter speed indicator**
   USB indicator
   Error display
   Err: Some kind of misoperation has occurred. Check the self-diagnosis display on the LCD screen (page 96) and take the appropriate corrective action.
   lEns: A problem has occurred with lens drive. Turn the camera on and off several times, and if the problem persists, contact your Sony dealer or authorized Sony service facility.
8. **Flash mode indicator**
9. **Spot light-metering indicator**
10. **Self-timer indicator**
11. **Macro mode indicator**

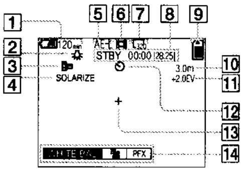
LCD screen indicators

The indicators during recording still images



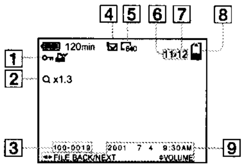
1. **Battery remaining indicator**
2. **Flash mode/red eye reduction/ white balance/AF illuminator indicator**
3. **Date/time/conversion lens/ISO number indicator**
4. **Sharpness indicator**
5. **Picture effect indicator**
6. **AF frame**
7. **Spot light-metering cross hair**
8. **AE/AF lock indicator**
9. **Recording mode indicator**
10. **Image size indicator**
11. **Image quality indicator**
12. **Mode dial indicator**
13. **Remaining number of recordable images indicator/ Self-diagnosis function indicator**
14. **Remaining memory capacity indicator**
15. **Macro 🌷/focus mode indicator/Focus preset value**
16. **EV level indicator**
17. **Aperture value indicator**
18. **Shutter speed indicator**
19. **Self-timer indicator**
20. **Light amount warning indicator**
21. **Menu and guide menu**
    Pressing MENU switches the menu on/off.

The indicators during recording moving images


1
2
3
4
5
6
7
8
9
10
11
12
13
14
120min
AE-L
STBY 00:00 [28:25]
SOLARIZE
3.0m
+2.0EV
PFX

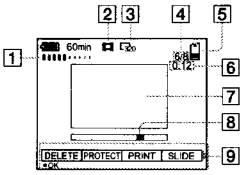
1. Battery remaining indicator
2. White balance indicator
3. Conversion lens indicator
4. Picture effect indicator
5. AE lock indicator
6. Recording mode indicator
7. Image size indicator
8. Recording time (maximum recordable time) indicator/ Self-diagnosis function indicator
9. Remaining memory capacity indicator
10. Macro 🌷/focus mode indicator/Focus preset value
11. EV level indicator
12. Self-timer indicator
13. Spot light-metering cross hair
14. Menu and guide menu
   Pressing MENU switches the menu on/off.

When playing back still images


1
2
3
4
5
6
7
8
9
120min
11/12
Q x1.3
100-0019
2001 7 4 9:30AM
FILE BACK/NEXT
VOLUME

1. Protect/print mark indicator
2. Zoom scaling indicator
3. File name
4. Recording mode indicator
5. Image size indicator
6. Image number
7. Number of stored images in "Memory Stick"
8. Remaining memory capacity indicator
9. Recording date of the playback image/menu and guide menu

When playing back moving images


1
2
3
4
5
6
7
8
9
60min
6/8
0:12
DELETE
PROTECT
PRINT
SLIDE
OK

1. VOL. (Volume) indicator
2. Recording mode indicator
3. Image size indicator
4. Image number/number of stored images in "Memory Stick"
5. Remaining memory capacity indicator
6. Counter
7. Playback image
8. Play bar
9. Menu and guide menu

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DSC-S85

SERVICE MANUAL

Level 2

Self Diagnosis Supported model

Ver 1.1 2001. 08

Cyber-shot Digital Still Camera

InfoLITHIUM M

MEMORY STICK

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

Differences Manual

**This Service Manual covers only differences from DSC-S75 (Level 2).
In performing repair, refer to DSC-S75 Service Manual (Level 2) (9-929-891-32) as well as this manual.**

- **Main differences:**
  □ □ □ □□□ □ □ □ □□□ □ □ □ □ □ □
  □□ □□ □□ →□□□□ □□□ □□□ □□ □ □□□ □

(SEE PAGE □□): Pages on the original service manual.
<SEE PAGE □□>: Pages on this service manual.
☞ : Points added parts.
☛ : Points deleted parts.
☛ : Points changed parts.

DIGITAL STILL CAMERA

SONY®

SPECIFICATIONS

System

Image device
8.98 mm (1/1.8 type)
color CCD

Lens
3× zoom lens
f = 7 – 21 mm (9/32 – 27/32 inches)
(34 – 102 mm (1 3/8 – 4 1/8 inches) when converted into a 35 mm still camera)
F = 2.0 – 2.5

Exposure control
Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data system
Movie: MPEG1
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG1 (Monaural)

Recording medium
"Memory Stick"

Flash
Recommended recording distance (ISO is set to AUTO): 0.3 m to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches)

Output connector

A/V OUT (Monaural)
Minijack
Video: 1 Vp-p, 75 Ω unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

USB jack
mini-B

External flash jack
Minijack

LCD screen

Used LCD panel
4.6 cm (1.8 type) TFT (Thin Film Transistor active matrix) drive

Total number of dots
123 200 (560×220) dots

General

Used battery pack
NP-FM50

Power requirements
7.2 V

Power consumption (during recording)
3.0 W

Operation temperature
0°C to 40°C
(32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
117×71×64 mm
(4 5/8×2 7/8×2 5/8 inches)
(w/h/d)

Mass
Approx. 462 g (1 lb)
(including battery pack NP-FM50, "Memory Stick," shoulder strap and lens cap etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/B/C AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operation temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
125×39×62 mm
(5×1 9/16×2 1/2 inches)
(w/h/d)

Mass
Approx. 280 g (10 oz)

NP-FM50 battery pack

Used battery
Lithium ion battery

Maximum voltage
DC 8.4 V

Nominal voltage
DC 7.2 V

Capacity
8.5 Wh (1 180 mAh)

Accessories

A/V connecting cable (1)
NP-FM50 battery pack (1)
AC-L10A AC power adaptor (1)
Power cord (1)
USB cable (1)
Lens cap (1)
Lens cap strap (1)
Shoulder strap (1)
"Memory Stick" (16 MB) (1)
CD-ROM (USB driver SPVD-004) (1)
Operating Instructions (1)

Design and specifications are subject to change without notice.

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SECTION 5
ADJUSTMENTS

5-1. CAMERA SECTION ADJUSTMENT

1-2. INITIALIZATION OF B, D, E, F, 7, 9 PAGE DATA

1-2-1. Initialization of D Page Data

1. Initializing D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) LCD system adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	03	0A	
3	4	00	2D	
4	4	01	2D	Press PAUSE button.
5	4	02		Check the data changes to “01”.
6				Perform “Modification of D page Data”.

1-2-2. Initialization of B, E, F, 7, 9 Page Data

1. Initializing B, E, F, 7, 9 Page Data

Note: If the B, E, F, 7, 9 Page data has been initialized, “Modification of B, E, F, 7, 9 Page Data” and following adjustments need to be performed again.
1) Modification of B, E, F, 7, 9 page data
2) Video system adjustments
3) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	7
Adjusting Address	00 to FF
Adjusting page	9
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	03	0A	
3	6	00	2D	
4	6	01	2D	Press PAUSE button.
5	6	02		Check the data changes to “01”.
6				Perform “Modification of B, E, F, 7, 9 page Data”.

5. F Page Table

Note 1: Fixed data-1: Initialized data.
(Refer to “1.Initializing of B, E, F, 7, 9 Page Data”)
Note 2: Fixed data-2: Modified data.
(Refer to “2.Modification of B, E, F, 7, 9 Page Data”)

Address	Initial value	Remark
10 to 13		Fixed data-1 (Initialized data)
14	33	Flange back adj.
15	48	
16	DA	
17	DF	
18	13	
19	C0	
1A	00	
1B	00	
1C	00	
1D	00	
1E	00	
1F	00	
20	20	
21	20	
22	BA	
23	46	
24	0A	
25	00	
26	85	Light level adj.
27	B0	
28	94	
29	00	F No. standard data input
2A	00	
2B	00	
2C	00	
2D	00	
2E to 39		Fixed data-1 (Initialized data)
3A	2F	Auto white balance standard data input
3B	37	
3C	40	
3D	D0	
3E		Fixed data-1 (Initialized data)
3F	B5	Auto white balance adj.
40	43	
41	03	Color reproduction adj.
42	E9	
43	63	
44	83	
45	D5	
46	FE	
47	73	
48	45	

Address	Initial value	Remark
49 to 4C		Fixed data-1 (Initialized data)
4D	28	Strobe white balance adj.
4E	6E	
4F to 58		Fixed data-1 (Initialized data)
59	00	Auto white balance standard data input
5A	14	Mechanical shutter adj.
5B		Fixed data-1 (Initialized data)
5C	63	Color reproduction adj.
5D	83	
5E	03	
5F	E9	
60 to 63		Fixed data-1 (Initialized data)
64	10	Strobe white balance adj.
65 to 68		Fixed data-1 (Initialized data)
69	02	Strobe white balance adj.
6A	79	
6B	F8	
6C	10	Mechanical shutter adj.
6D	05	
6E	09	
6F	B5	
70	07	
71	C4	
72	07	
73	48	
74	06	
75	CB	
76	01	
77	01	
78	01	
79	01	
7A	01	
7B	2C	
7C	3A	
7D	2E	
7E	40	
7F	40	
80	00	Auto white balance adj.
81 to 86		Fixed data-1 (Initialized data)
87	FF	Flange back adj.
88	00	
89	00	
8A	00	

Address	Initial value	Remark
8B	00	Flange back adj.
8C	00	
8D	00	
8E	00	
8F	00	
90	00	
91	00	
92	00	
93	00	
94	00	
95	00	
96	00	
97	00	
98	00	
99	00	
9A	00	
9B	00	
9C		Fixed data-1 (Initialized data)
9D	16	Smear compensation adj.
9E	1C	
9F		Fixed data-1 (Initialized data)
A0	00	Mixed color cancel adj.
A1	00	
A2	00	
A3	00	
A4 to A8		Fixed data-1 (Initialized data)
A9	2C	Auto white balance adj.
AA	06	
AB to D3		Fixed data-1 (Initialized data)
D4	80	Mechanical shutter adj.
D5	9E	
D6	94	
D7	94	
D8	94	
D9 to FF		Fixed data-1 (Initialized data)

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

Note: For "CAMERA SYSTEM ADJUSTMENTS", perform in order of item numbers.

Data setting during camera system adjustments

Perform the following data setting before the camera system adjustments.

Menu setting:

1) VIDEO OUT of SET UP menu................ NTSC (NTSC mode)
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL")

Data setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	D	10	80	Press PAUSE button.
3	2	10		Check the bit values of bit3, bit4 and bit5 are "1". (Note 1, 2)
4	D	11	40	Press PAUSE button.
5	D	10	81	Press PAUSE button.
5	6	C1		Check the data changes to "02".
6	4	06	01	
7	6	6C	01	
8				Wait for 1 second.
9	B	75	00	Press PAUSE button.

Note 1: For the bit values, refer to "5-2. SERVICE MODE", "2-3. 2. Bit value discrimination".

Note 2: In case of wrong data, select page: 2, address: 0A and set data: 02.
Set the adjusting remote commander to normal LANC, and the power will be turned off and on automatically. Wait for more than 0.167 second after the power on, and set the adjusting remote commander to the service LANC. Then, retry from the step 1.

Note 3: Repeat the "Data setting method", if the power was turned off and on during the "CAMERA SYSTEM ADJUSTMENTS".

After completing the camera system adjustments, release the data setting:

Order	Page	Address	Data	Procedure
1	4	06	00	
2	6	6C	00	
3	B	75	10	Press PAUSE button.
4	D	11	00	Press PAUSE button.
5	D	10	00	Press PAUSE button.
6	0	01	00	

1. Flange Back Adjustment (Using the minipattern box)

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA
Subject	Siemens star chart with ND filter for minipattern box (Note 1)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25, 87 to 9B

Note 1: Dark Siemens star chart.
Note 2: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of unit OFF/ON.

Preparations before adjustments:

1) The minipattern box is installed as shown in the following figure.
   Note 3: The attachment lenses are not used.
   Note 4: Take care not to hit the mini-pattern box when extending the lens.
2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
6) Check that the data on page: F, address: 14 to 25 and 87 to 9B are initial value (See table below).

Address	Data	Address	Data	Address	Data
14	33	21	20	8F	00
15	48	22	BA	90	00
16	DA	23	46	91	00
17	DF	24	0A	92	00
18	13	25	00	93	00
19	C0	87	FF	94	00
1A	00	88	00	95	00
1B	00	89	00	96	00
1C	00	8A	00	97	00
1D	00	8B	00	98	00
1E	00	8C	00	99	00
1F	00	8D	00	9A	00
20	20	8E	00	9B	00

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

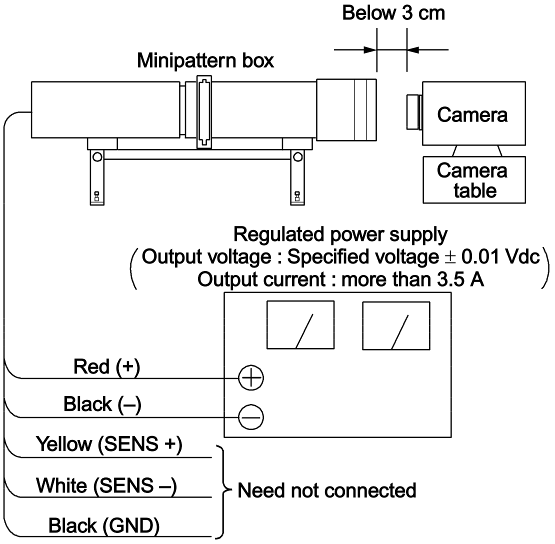


Fig. 5-1-13

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	01	13	Press PAUSE button.
4	6	01	27	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to “01”.
6	F	87		Check the data changes to “00”.

Note 5: The adjustment data will be automatically input to page: F, address: 14 to 25 and 87 to 9B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-14)
3	0	01	00	
4				Perform“Flange Back Check”.

2. Flange Back Adjustment
(Using the flange back adjustment chart)

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA
Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 300 to 400 lux)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25, 87 to 9B

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Preparations before adjustments:

1) Place the Flange back adjustment chart 2.0 m from the front of the lens.
2) Check that the center of Flange back adjustment chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
3) Check that the data on page: F, address: 14 to 25 and 87 to 9B are initial value (See table below).

Address	Data	Address	Data	Address	Data
14	33	21	20	8F	00
15	48	22	BA	90	00
16	DA	23	46	91	00
17	DF	24	0A	92	00
18	13	25	00	93	00
19	C0	87	FF	94	00
1A	00	88	00	95	00
1B	00	89	00	96	00
1C	00	8A	00	97	00
1D	00	8B	00	98	00
1E	00	8C	00	99	00
1F	00	8D	00	9A	00
20	20	8E	00	9B	00

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	01	13	Press PAUSE button.
4	6	01	15	Press PAUSE button. (Note 2)
5	6	02		Check the data changes to "01".
6	F	87		Check the data changes to "00".

Note 2: The adjustment data will be automatically input to page: F, address: 14 to 25 and 87 to 9B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-14)
3	0	01	00	
4				Perform"Flange Back Check".

3. Flange Back Check

Mode	CAMERA
Subject	Siemens star chart (1.0 m from the front of the lens) (Luminance: 200 to 400 lux)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Specified value	Focused at the TELE end and WIDE end

Checking method:

Order	Page	Address	Data	Procedure
1				Place the Siemens star 1.0 m from the front of the lens. To open the IRIS , decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
4				Shoot the Siemens star chart with the zoom TELE end. At this time, the center of Siemens star chart should be in the center of the LCD screen.
5				Check that the lens is focused.
6	6	2C	01	
7				While observe the LCD screen, change the zoom to the WIDE end and check that the lens is focused.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	2C	00	
2				Release the data setting performed at step 3. (Refer to page 5-14)
3	0	01	00	

4. Picture Frame Setting

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note 1: Displayed data of the page 1 of adjusting remote commander.

1:XX:XX
YL data
YH data

Switch setting:

1) FOCUS .... AF (AUTO FOCUS)

Setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3				Shoot the color bar chart with the zoom WIDE end.
4				Enter the output of VIDEO OUT to the TV monitor, and move to the position as shown in Fig. 5-1-16.
5				Horizontal width of one color (B, C) and that of black (A, D) on the color bar chart should be same. (See Fig. 5-1-14)
6				With vertical width of black (E, F) set in same, the color bar chart should come to the center of TV monitor. (See Fig. 5-1-15)
7				Check that the color bar on the TV monitor is focused.
8	0	03	22	
9	1			Note down the YH and YL data. (Note 1)

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2				Release the data setting performed at step 2 . (Refer to page 5-14)
3	0	01	00	

How to reset the zoom and focus when they deviated:

Order	Page	Address	Data	Procedure
1	6	2C	01	
2	6	90	00	
3	6	91	00	
4	6	92	YL	(Note 2)
5	6	93	YH	(Note 2)
6	6	01	79	Press PAUSE button.
7	6	07		Check the data changes to "01".
8	6	01	00	Press PAUSE button.

Note 2: The data noted down at step 9 of "Setting method".

Check on the oscilloscope

1. Horizontal period

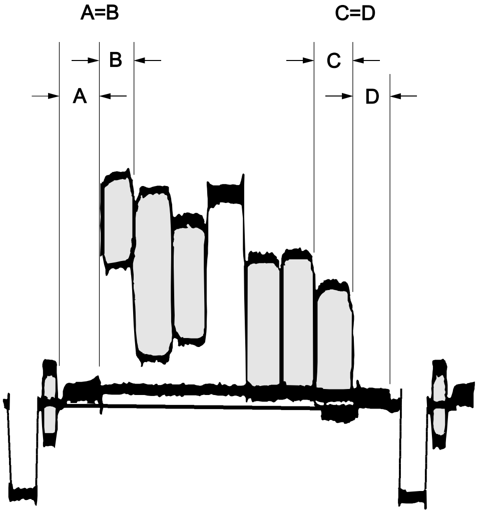


Fig. 5-1-14

2. Vertical period

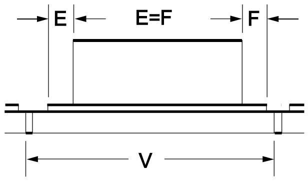


Fig. 5-1-15

Check on the TV monitor

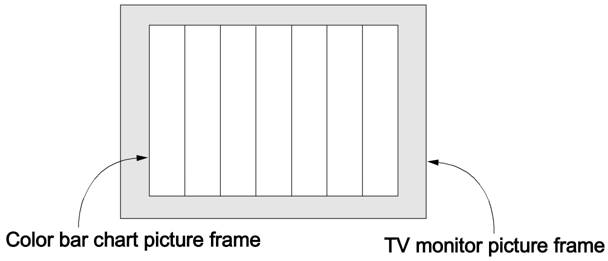


Fig. 5-1-16

5. F No. Standard Data Input

Compensate the unevenness of the iris meter sensitivity.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	29 to 2D

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	BB	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: 29 to 2D.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

6. Mechanical Shutter Adjustment

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	5A, 6C to 7F, D4 to D8

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	AD	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".
13	6	AB		Check the data changes to "00".

Note 3: The adjustment data will be automatically input to page: F, address: 5A, 6C to 7F and D4 to D8.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

7. Light Level Adjustment

Adjust the standard LV value.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Displayed data of page: 1 (Note 3)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	26 to 28
Specified Value	AE level: 0FC0 to 1040

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
Displayed data

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	01	0D	Press PAUSE button. (Note 4)
12	6	02		Check the data changes to “01”.
13	0	03	06	
14	1			Check that the displayed data (Note 3) satisfies the AE level specified value.

Note 4: The adjustment data will be automatically input to page: F, address: 26 to 28.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed atstep 2 . (Refer to page 5-14)
7	0	01	00	

8. Mixed Color Cancel Adjustment

To perform mixed color cancel adjustment based on data of each color in color bar.

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	A0 to A3

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	01	D7	Press PAUSE button.
12	6	01	D5	Press PAUSE button. (Note 3)
13	6	02		Check the data changes to “01”.

Note 3: The adjustment data will be automatically input to page: F, address: A0 to A3.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

9. Auto White Balance Standard Data Input

Adjust the white balance standard data at 3200K.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	3A to 3D, 59

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: "Auto White Balance Standard Data Input" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	11	Press PAUSE button.
12	6	01	0B	Press PAUSE button. (Note 4)
13	6	02		Check the data changes to "01".

Note 4: The adjustment data will be automatically input to page: F, address: 3A to 3D and 59.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

10. Auto White Balance Adjustment

Adjust to the proper auto white balance output data. If it is not correct, auto white balance and color reproducibility will be poor.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Filter	Filter C14 for color temperature correction
Measurement Point	Displayed data of page: 1 (Note 3)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	3F, 40, 80, A9, AA
Specified Value	R ratio: 28E0 to 2A20 B ratio: 5D60 to 5EA0

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
Displayed data

Note 4: "Auto White Balance Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	00	
7	6	92	YL	(Note 2)
8	6	93	YH	(Note 2)
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
12	6	01	A7	Press PAUSE button.
13	F	49 4A 4B 4C		Note down the data.
14	F	49 4A 4B 4C	29 80 5E 00	Press PAUSE button.
15	6	01	A5	Press PAUSE button. (Note 5)
16	6	02		Check the data changes to "01".
17	6	01	3F	Press PAUSE button.
18	0	03	04	
19	1			Check that the displayed data (Note 3) satisfies the R ratio specified value.
20	0	03	05	
21	1			Check that the displayed data (Note 3) satisfies the B ratio specified value.
22	6	01	00	Press PAUSE button.
23	6	01	11	Press PAUSE button.
24	6	13	AE	Press PAUSE button.
25	6	01	D3	Press PAUSE button.
26	6	02		Check the data changes to "01".

Note 5: The adjustment data will be automatically input to page: F, address: 3F, 40, 80, A9 and AA.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	13	00	Press PAUSE button.
4	6	2C	00	
5	6	92	00	
6	6	93	00	
7	F	49 4A 4B 4C		Set the data noted down at step 13, and press PAUSE button.
8				Release the data setting performed at step 3 . (Refer to page 5-14)
9	0	01	00	
10				Remove the C14 filter on the lens.

11. Smear Compensation Adjustment

Adjust the smear compensation data from white balance standard data at 3200K.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	9D, 9E

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: "Smear Compensation Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	11	Press PAUSE button.
12	6	13	AE	Press PAUSE button.
13	6	01	D1	Press PAUSE button. (Note 4)
14	6	02		Check the data changes to "01".

Note 4: The adjustment data will be automatically input to page: F, address: 9D and 9E.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	13	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed at step 2. (Refer to page 5-14)
7	0	01	00	

12. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	41 to 48, 5C to 5F

Note 1: Check that the data of page: 6, address: 02 is “00”.
If not, turn the power of the unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Note 3: “Color Reproduction Adjustment” is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	01	AB	Press PAUSE button.
12	6	12	80	
13				Wait for 1 second.
14	6	12	00	
15				Wait for 2 seconds.
16	6	01	A9	Press PAUSE button. (Note 4)
17	6	02		Check the data changes to “01”.

Note 4: The adjustment data will be automatically input to page: F, address: 41 to 48 and 5C to 5F.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	
7				Perform “Color Reproduction Check”.

13. Color Reproduction Check

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Vectorscope
Specified Value	All color luminance points should settle within each color reproduction frame.

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	10	01	
12	E	52		Note down the data.
13	E	52	09	Press PAUSE button.
14	6	01	0F	Press PAUSE button.
15	6	12	80	
16				Wait for 1 second.
17	6	12	00	
18				Wait for 2 seconds.
19				Check the each color luminance point is in each color reproduction frame.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	10	00	
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6	E	52		Set the data noted down at step 12, and press PAUSE button.
7				Release the data setting performed at step 2 . (Refer to page 5-14)
8	0	01	00	

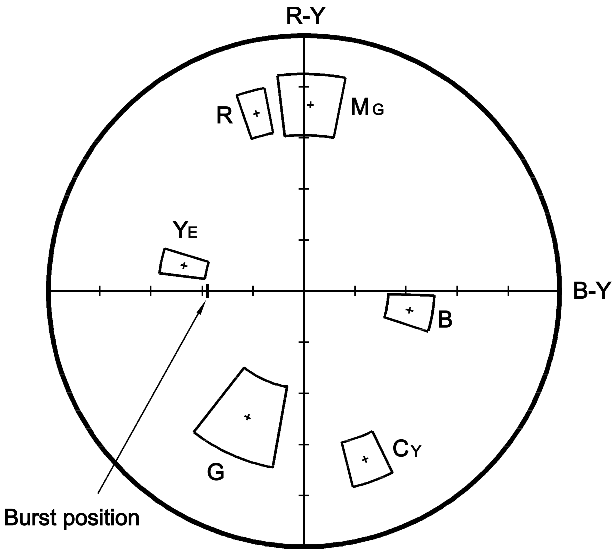


Fig. 5-1-17

14. Auto White Balance Check

Mode	CAMERA	
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)	
Measurement Point	Displayed data of of Page: 1 (Note 3)	Video terminal A/V OUT jack (75 Ω terminated)
Measuring Instrument	Adjusting remote commander	Vectorscope
Specified Value	R ratio: 3E00 to 4200 B ratio: 3E00 to 4200	Fig. 5-1-18 (A) and (B)

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
Displayed data

Checking method:

Order	Page	Address	Data	Procedure
1				Check that the lens is not covered with either filter.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	00	
7	6	92	YL	(Note 2)
8	6	93	YH	(Note 2)
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
INDOOR data check (without ND filter)				
12	E	52		Note down the data.
13	E	52	0E	Press PAUSE button.
14	6	01	0F	Press PAUSE button.
15	0	03	04	
16	1			Check that the displayed data (Note 3) satisfied the R ratio specified value.
17	0	03	05	
18	1			Check that the displayed data (Note 3) satisfied the B ratio specified value.
INDOOR luminance point check				
19				Check that the center of the white luminance point within the circle shown Fig. 5-1-18 (A).
OUTDOOR luminance check				
20				Place the C14 filter on the lens.
21	E	4B		Note down the data.
22	E	4B	20	Press PAUSE button.
23	6	01	3F	Press PAUSE button.
24				Check that the center of the white luminance point settles in the circle shown Fig. 5-1-18 (B).

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6	E	4B		Set the data noted down at step 21, and press PAUSE button.
7	E	52		Set the data noted down at step 12, and press PAUSE button.
8				Release the data setting performed at step 3 . (Refer to page 5-14)
9	0	01	00	
10				Remove the C14 filter on the lens.

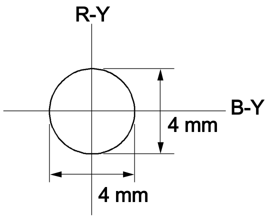


Fig. 5-1-18 (A)

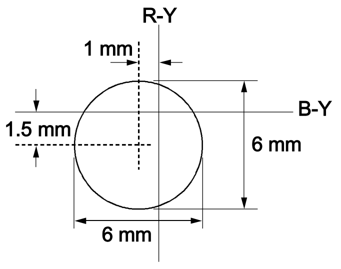


Fig. 5-1-18 (B)

15. CCD White Defect Compensation

Mode	CAMERA
Subject	Not required
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	88 to A3

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of unit OFF/ON.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	F	DE		Note down the data.
4	F	DE	1E	Press PAUSE button.
5	F	E3		Note down the data.
6	F	E3	0E	Press PAUSE button.
7	6	01	8B	Press PAUSE button. (Note 2)
8	6	02		Check the data changes to “01”.
9	6	55		Check the data. 00 to 7F: Normal 80 to FF: Defective
10	6	01	00	Press PAUSE button.
11	F	DE	0F	Press PAUSE button.
12	F	E3	60	Press PAUSE button.
13	6	01	87	Press PAUSE button.
14	6	02		Check the data changes to “01”.
15	6	55		Check the data changes to “00”.

Note 2: The adjustment data will be automatically input to page: 7, address: 88 to A3.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	F	E3		Set the data noted down at step 5, and press PAUSE button.
3	F	DE		Set the data noted down at step 3, and press PAUSE button.
4				Release the data setting performed at step 2 . (Refer to page 5-14)
5	0	01	00	

16. CCD Black Defect Compensation

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	60 to 87

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Check that there are no dust, no dirt and reflection of the clear chart.

Note 3: Any subject other than the clear chart should be in the screen.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	F	DF		Note down the data.
4	F	DF	4C	Press PAUSE button.
5	6	2C	01	
6	6	90	00	
7	6	91	03	
8	6	92	00	
9	6	93	00	
10	6	01	79	Press PAUSE button.
11	6	30	01	
12	6	07		Check the data changes to "01".
13	6	01	8D	Press PAUSE button. (Note 4)
14	6	02		Check the data changes to "01".
15	6	55		Check the data. 00 to 0A: Normal 0B to FF: Defective
16	6	01	00	Press PAUSE button.
17	F	DF	5A	Press PAUSE button.
18	6	01	89	Press PAUSE button.
19	6	02		Check the data changes to "01".
20	6	55		Check the data changes to "00".

Note 4: The adjustment data will be automatically input to page: 7, address: 60 to 87.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	30	00	
4	6	91	00	
5	F	DF		Set the data noted down at step 3, and press PAUSE button.
6				Release the data setting performed at step 2 . (Refer to page 5-14)
7	0	01	00	

17. Strobe White Balance Adjustment

Adjust the white balance when the strobe light flashed.

Mode	CAMERA
Subject	Flash adjustment box (Note 3) (1.0 m from the front of the lens)
Adjustment Page	F
Adjustment Address	4D, 4E, 64, 69 to 6B
Specified Value	Y level data: 60 to 94 (Note 4) R-Y level data: FA to FF or 00 to 06 (Note 5) B-Y level data: FA to FF or 00 to 06 (Note 5)

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of unit OFF/ON.

Note 2: Perform this adjustment in the Flash adjustment box.

Note 3: Refer to “4. Preparing the Flash adjustment box”. (See page 5-7)

Note 4: Displayed data of page: F, address: 64, of the adjusting remote commander.

F:XX:64
└── Y level data

Note 5: The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
 └── B-Y level data
└── R-Y level data

Note 6: “Strobe White Balance Adjustment” is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Switch setting:

1) FLASH .... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	90	00	
4	6	91	00	
5	6	92	FF	
6	6	93	FF	
7	6	2C	01	
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	67	Press PAUSE button.
11				Check the flashing of strobe light.
12	6	02		Check the data changes to “01”.
13	6	01	00	Press PAUSE button.
14	6	01	67	Press PAUSE button.
15				Check the flashing of strobe light.
16	6	02		Check the data changes to “01”.
17	6	01	00	Press PAUSE button.
18	7	03	05	Press PAUSE button.
19	6	01	B9	Press PAUSE button. (Note 7)
20				Check the flashing of strobe light.
21	6	02		Check the data changes to “01”.
22	6	01	00	Press PAUSE button.
23	7	03	04	Press PAUSE button.
24	6	01	67	Press PAUSE button.
25				Check the flashing of strobe light.
26	6	02		Check the data changes to “01”.
27	F	64		Check that the data satisfies the Y level data satisfied value. (Note 4)
28	0	03	02	
29	1			Check the R-Y and B-Y level data (Note 5) satisfies the specified value.

Note 7: The adjustment data will be automatically input to page: F, address: 4D, 4E, 64 and 69 to 6B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed at step 2 . (Refer to page 5-14)
7	0	01	00	

SECTION 6
REPAIR PARTS LIST

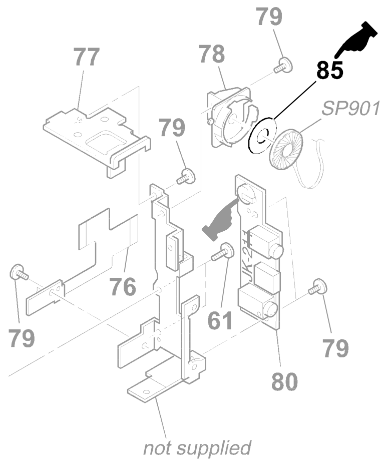
6-1. EXPLODED VIEWS

6-1-1. MAIN SECTION
(Service manual page 6-1)

DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-069-158-01	PROCESS, (M2) INTERIOR LOCK		1	3-719-381-01	SCREW (M2X4)	
2	3-069-159-01	PROCESS, (M2) INTERIOR LOCK		2	3-069-159-11	PROCESS, (M2) INTERIOR LOCK	
3	X-3951-668-1	HOLDER ASSY, BATTERY		3	X-3951-783-1	HOLDER ASSY, BATTERY	
4	3-068-640-01	LID, BATTERY		4	3-068-640-11	LID, BATTERY	

6-1-2. CABINET (FRONT) BLOCK ASSEMBLY
(Service manual page 6-2)

☛ : Points deleted portion.



DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-068-605-01	SCREW, FILTER		51	3-068-605-11	SCREW, FILTER	
54	3-068-608-01	GRIP		54	3-068-608-11	GRIP	
55	3-068-603-01	COVER, CABINET (FRONT)		55	3-068-603-11	COVER, CABINET (FRONT)	
56	X-3951-665-1	CABINET (FRONT) ASSY		56	X-3951-781-1	CABINET (FRONT) ASSY	
57	3-068-688-01	RETAINER, COVER SHAFT		57	3-068-688-11	RETAINER, COVER SHAFT	
58	3-068-611-01	COVER, JACK		58	3-068-611-11	COVER, JACK	
63	3-069-158-11	PROCESS, (M2) INTERIOR LOCK		63	3-719-381-01	SCREW (M2X4)	
64	1-476-666-11	SWITCH BLOCK, CONTROL (MODE)		64	1-476-666-21	SWITCH BLOCK, CONTROL (MODE)	
65	X-3951-667-1	CABINET ASSY, UPPER		65	X-3951-782-1	CABINET ASSY, UPPER	
68	X-3951-670-1	GRILLE ASSY, MICROPHONE		68	X-3951-784-1	GRILLE ASSY, MICROPHONE	
70	3-069-159-01	PROCESS, (M2) INTERIOR LOCK		70	3-069-159-11	PROCESS, (M2) INTERIOR LOCK	
85	3-069-404-01	SPACER, SP					

6-1-3. LENS BLOCK ASSEMBLY
(Service manual page 6-3)

DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
104	1-758-437-11	FILTER BLOCK, OPTICAL		104	1-758-618-11	FILTER BLOCK, OPTICAL	
106	A-7074-888-A	SY-68 BOARD, COMPLETE (SERVICE)		106	A-7096-838-A	SY-68 BOARD, COMPLETE (SERVICE)	
IC151	A-7031-268-A	CCD BLOCK ASSY (CCD IMAGER)(Note)		IC151	A-7031-289-A	CCD BLOCK ASSY (CCD IMAGER)(Note)	

6-1-4. CABINET (REAR) BLOCK ASSEMBLY
(Service manual page 6-4)

DSC-S75				DSC-S85			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
157	X-3951-671-1	CABINET (REAR) ASSY		157	X-3951-785-1	CABINET (REAR) ASSY	
160	3-068-654-01	COVER, DC (IN)		160	3-068-654-11	COVER, DC (IN)	

6-2. ELECTRICAL PARTS LIST

Page	DSC-S75				DSC-S85			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
			ACCESSORIES □ □ □ □ □ □ □ □ □ □ □ □ □				ACCESSORIES □ □ □ □ □ □ □ □ □ □ □ □ □	
6-14		3-068-187-01	MANUAL, INSTRUCTION (JAPANESE) (J)			3-068-188-01	MANUAL, INSTRUCTION (JAPANESE) (J)	
		3-068-187-11	MANUAL, INSTRUCTION (ENGLISH) (US, CND, AEP, UK, E, AUS, CN, HK, JE)			3-068-188-11	MANUAL, INSTRUCTION (ENGLISH) (US, CND, AEP, UK, E, AUS, CN, HK, JE)	
		3-068-187-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (CND, AEP, JE)			3-068-188-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (CND, AEP, JE)	
		3-068-187-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E, JE)			3-068-188-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E, JE)	
		3-068-187-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN) (AEP)			3-068-188-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN) (AEP)	
		3-068-187-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE, SIMPLIFIED CHINESE) (E, CN, HK, JE)			3-068-188-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE, SIMPLIFIED CHINESE) (E, CN, HK, JE)	
		3-068-187-61	MANUAL, INSTRUCTION (SWEDISH, RUSSIAN) (AEP, JE)			3-068-188-61	MANUAL, INSTRUCTION (SWEDISH, RUSSIAN) (AEP, JE)	
		3-068-187-71	MANUAL, INSTRUCTION (ARABIC) (E)			3-068-188-71	MANUAL, INSTRUCTION (ARABIC) (E)	
		3-068-187-81	MANUAL, INSTRUCTION (KOREAN) (KR, JE)			3-068-188-81	MANUAL, INSTRUCTION (KOREAN) (KR, JE)	

Sony EMCS Co. Kohda TEC

2001H0500-1

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Published by PV Customer Center

DSC-S75

SERVICE MANUAL

Level 2

Self Diagnosis
Supported model

Ver. 1.0 2001. 04

Cyber-shot
Digital Still Camera

InfoLITHIUM M

MEMORY STICK

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

This service manual contains information for Japanese model as well.

On the SY-68 board

This service manual procides the information that is premised the circuit board replacement service and not intended repair inside the SY-68 board.
Therefore, schematic diagram, printed wiring board and electrical parts list of the SY-68 board are not shown.
The following pages are not shown.

SY-68 board

Schematic diagram .... Pages 4-11 to 4-30
Printed wiring board .... Pages 4-7 to 4-10
Electrical parts list .... Pages 6-8 to 6-13

The above-described information is shown in service manual Level 3.

SPECIFICATIONS

System

Image device
8.93 mm (1/1.8 type) color CCD

Lens
3× zoom lens
f = 7 – 21 mm (9/32 – 27/32 inches)
(34 – 102 mm (1 3/8 – 4 1/8 inches) when converted into a 35 mm still camera)
F = 2.0 – 2.5

Exposure control
Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data system
Movie: MPEG1
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG1 (Monaural)

Recording medium
"Memory Stick"

Flash
Recommended recording distance (ISO is set to AUTO): 0.3 m to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches)

Output connector

A/V OUT (Monaural)
Minijack
Video: 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

USB jack
mini-B

External flash jack
Minijack

LCD screen

Used LCD panel
1.8 type TFT (Thin Film Transistor active matrix) drive

Total number of dots
123 200 (560×220) dots

General

Used battery pack
NP-FM50

Power requirements
7.2 V

Power consumption (during recording)
3.0 W

Operation temperature
0°C to 40°C
(32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
117×71×64 mm
(4 5/8×2 7/8×2 5/8 inches) (w/h/d)

Mass
Approx. 462 g (1 lb) (including battery pack NP-FM50, "Memory Stick," shoulder strap and lens cap etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/B/C AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operation temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C
(–4°F to +140°F)

Maximum dimensions
125×39×62 mm
(5×1 9/16×2 1/2 inches) (w/h/d)

Mass
Approx. 280 g (10 oz)

NP-FM50 battery pack

Used battery
Lithium ion battery

Maximum voltage
DC 8.4 V

Nominal voltage
DC 7.2 V

Capacity
8.5 Wh (1 180 mAh)

Accessories

A/V connecting cable (1)
NP-FM50 battery pack (1)
AC-L10A AC power adaptor (1)
Power cord (1)
USB cable (1)
Lens cap (1)
Lens cap strap (1)
Shoulder strap (1)
"Memory Stick" (8 MB) (1)
CD-ROM (2)
Operating Instructions (1)

Design and specifications are subject to change without notice.

DIGITAL STILL CAMERA

SONY®

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270 °C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

LF : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C .
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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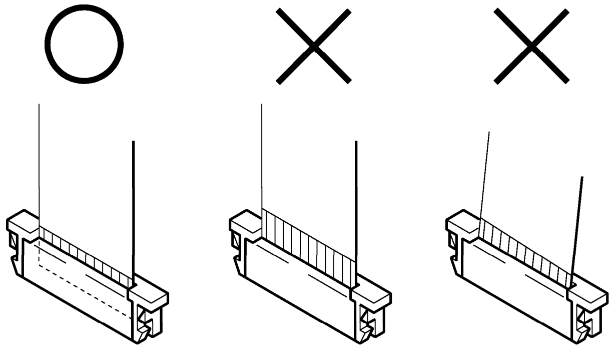
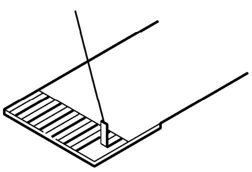
* The color reproduction frame is shown on page 109.

SERVICE NOTE

• NOTE FOR REPAIR

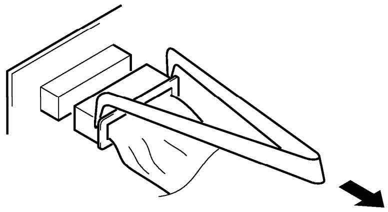
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



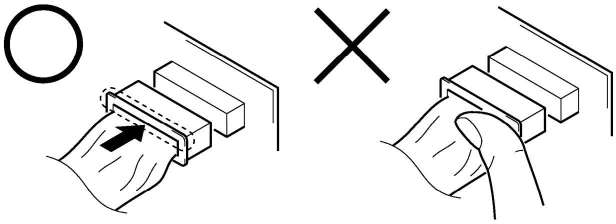


Cut and remove the part of gilt which comes off at the point.
(Be careful or some pieces of gilt may be left inside)

When remove a connector, don't pull at wire of connector.
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector.
It is possible that a wire is snapped.

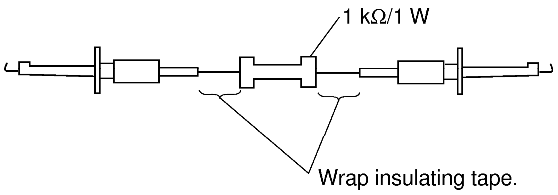


[Discharging of the FLASH unit's charging capacitor]

The charging capacitor of the FLASH unit is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the battery is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the DSC-S75 is simply turned off. Therefore, the remaining voltage must be discharged as described below.

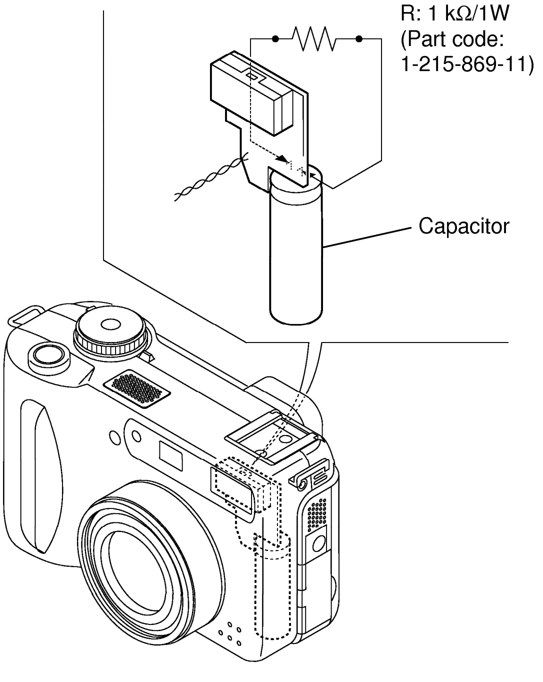
Preparing the Short Jig

To preparing the short jig. a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11).
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

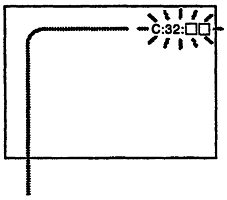
Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



[Description on Self-diagnosis Display]

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□
  You can reverse the camera malfunction yourself. (However, contact your Sony dealer or local authorized Sony service facility when you cannot recover from the camera malfunction.)
- E: □□: □□
  Contact your Sony dealer or local authorized Sony service facility.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	

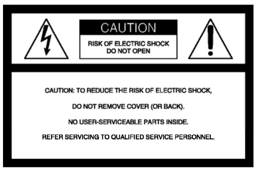
SECTION 1
GENERAL

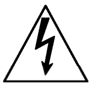
This section is extracted from instruction manual.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For the Customers in the U.S.A.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Never expose the battery pack to temperature above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

If you have any questions about this product, you may call:
Sony Customer Information Services Center
1-800-222-SONY (7669)

The number below is for the FCC related matters only.

Declaration of Conformity

Trade Name:	SONY
Model No.:	DSC-S75
Responsible Party:	Sony Electronics Inc.
Address:	680 Kinderkamack Road, Oradell, NJ 07649 USA
Telephone No.:	201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the Customers in the U.S.A.

DISPOSAL OF LITHIUM ION BATTERY.

LITHIUM ION BATTERY.

DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center.

Note:

In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)

Caution:

Do not handle damaged or leaking lithium ion battery.

For the Customers in Germany

Directive:EMC Directive 89/336/EEC,
92/31/EEC

This equipment complies with the EMC regulations when used under the following circumstances:

- Residential area
- Business district
- Light-industry district

(This equipment complies with the EMC standard regulations EN55022 Class B.)

Attention for the Customers in Europe

This product has been tested and found compliant with the limits sets out on the EMC Directive for using connection cables shorter than 3 meters.

The electromagnetic fields at the specific frequencies may influence the picture and sound of this camera.

"Memory Stick" and battery pack

For the Customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

"Memory Stick"

CE N50

For the Customers in the U.S.A. and Canada

THIS CLASS B DIGITAL DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND THE CANADIAN ICES-003 OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

Be sure to read the following before using your camera

Trial recording

Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording

Contents of the recording cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or recording medium, etc.

Notes on image data compatibility

- This camera conforms with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electric and Information Technology Industries). You cannot play back on your camera still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E, DSC-D700, DSC-D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Do not shake or strike the camera

In addition to malfunctions and inability to record images, this may render the "Memory Stick" unusable or image data breakdown, damage or loss may occur.

Do not aim the camera at the sun or other bright light

This may cause irrecoverable damage to your eyes.

LCD screen, LCD finder (only models with a finder) and lens

- The LCD screen and the LCD finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the LCD finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions.

Do not get the camera wet

When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. If moisture condensation occurs, refer to page 79 and follow the instructions on how to remove it before using the camera.

Back up recommendation

To avoid the potential risk of data loss, always copy (back up) data to a disk.

Handling of the movable lens

This camera uses a movable lens.
Be careful not to strike or apply excessive force to the lens portion.

When the camera is used for long periods

Note that the camera body may become hot.

About the Carl Zeiss lens

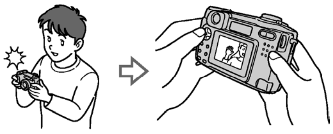
This camera is equipped with a Carl Zeiss lens which is capable of reproducing fine images. The lens for this camera uses the MTF* measurement system for cameras developed jointly by Carl Zeiss, in Germany, and Sony Corporation, and offers the same quality as other Carl Zeiss lenses.

* MTF is the abbreviation of Modulation Transfer Function/Factor, a numeric value indicating the amount of light from a specific part of the subject gathered at the corresponding position in the image.

Introduction

Checks the image after recording images

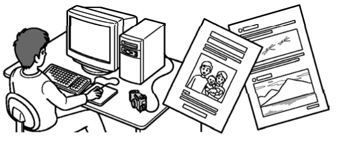
Recording still images: page 19
Playing back still images: page 28
Deleting images (DELETE): page 67



Captures images with your computer

You can copy images onto your computer and view and modify images or attach images to e-mail on your computer using the supplied USB cable and application software.

Viewing images using a personal computer: page 31
Recording still images for e-mail (E-MAIL): page 53



Records a moving picture (MPEG Movie or Clip Motion) according to your purpose

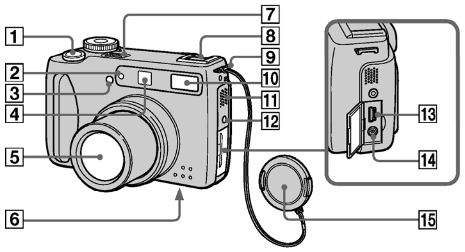
The digital still camera can record a moving picture with audio (MPEG MOVIE): page 26

Selects the recording mode from various types of recordings according to your situation

Creating Clip Motion Files: page 56
Adding audio files to still images (VOICE): page 54
Recording text documents (TEXT): page 55
Recording still images as uncompressed files (TIFF): page 56

Identifying the parts

See the pages in parentheses for details of operation.



1 **Shutter button (19) (27)**

2 **Self-timer (23) (27)/ AF illuminator (25)**

3 **Photocell window for flash**
Do not block while recording with the flash.

4 **Finder window**

5 **Lens**
When cleaning the lens, first return the lens to the fully retracted position and turn off the power, then gently wipe the lens.

6 **Tripod receptacle (bottom surface)**
Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.

7 **Built-in microphone**
Do not touch while recording.

8 **Accessory shoe**

9 **Hook for lens cap/strap**

10 **Flash (24)**

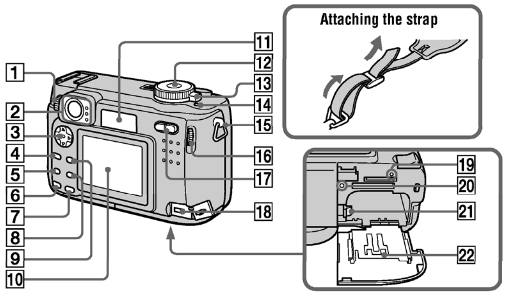
11 **Speaker**

12 **ACC (Accessory) jack**

13 **USB jack (33) (35)**

14 **A/V OUT jack (66)**
Audio output is monaural.

15 **Lens cap (supplied)**
Be sure to remove the lens cap before recording.



1 **Finder adjustment dial (21)**

2 **Finder**
Self-timer/recording lamp (red)
AE/AF lock lamp (green)
⚡ Flash charge lamp (orange) (24)

3 **Control button (18) (41)**

4 **MENU button (41)**

5 **☒ (Exposure) button (59)**

6 **FOCUS button (58)**

7 **AE LOCK button (49)**

8 **[●] (spot meter) button (62)**

9 **DSPL/LCD ON/OFF button (23)**

10 **LCD screen**

11 **Display window**

12 **Mode dial (18) (40)**

📷 : To record still images, VOICE mode audio data
▶ : To playback or edit images
🎞 : To record moving images or Clip Motion images
SET UP: To set the setup items
SCN: To record in the SCENE SELECTION mode
M: To record with the manual adjustment
A: To record in the aperture priority mode
S: To record in the shutter speed priority mode

13 **POWER switch (15)**

14 **POWER ON/OFF (CHG) lamp (15)**

15 **Hook for strap**

16 **Jog dial (42)**

17 **Zoom button (INDEX button during playback) (22)**

18 **DC IN jack (11) (14)**

19 **RESET button (83)**

20 **Access lamp (17)**

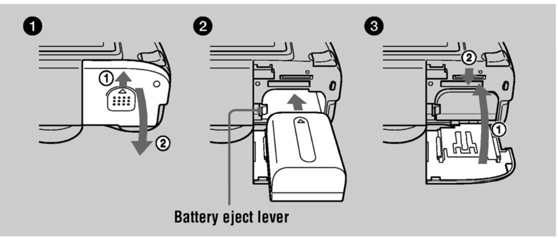
21 **Battery eject lever (10)**

22 **Battery/“Memory Stick” cover**

Preparing the power supply

Installing the battery pack

Your camera operates only with the “InfoLITHIUM” NP-FM50 battery pack* (M series). You cannot use any other battery pack. See page 81 for more information about “InfoLITHIUM” battery pack.



❶ ***Open the battery/“Memory Stick” cover.***
Slide the cover in the direction of the arrow.

❷ ***Install the battery pack.***
Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

❸ ***Close the battery/“Memory Stick” cover.***

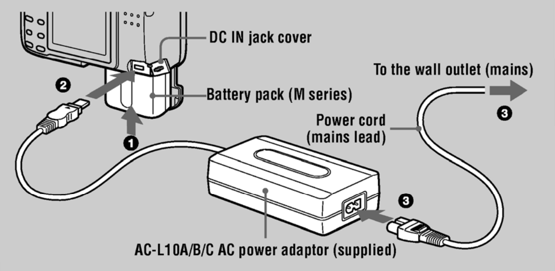
To remove the battery pack

Open the battery/“Memory Stick” cover. Slide the battery eject lever downward, and remove the battery pack.
Be careful not to drop the battery pack when removing it.

**** What is “InfoLITHIUM”?***
“InfoLITHIUM” is a lithium ion battery pack which can exchange information such as battery consumption with compatible video equipment. This unit is compatible with the “InfoLITHIUM” battery pack (M series). “InfoLITHIUM” M series battery packs have the ⓘInfoLITHIUM Ⓜ mark. “InfoLITHIUM” is a trademark of Sony Corporation.

Charging the battery pack

You cannot charge the battery pack while your camera is turned on. Be sure to turn off your camera.



❶ **Insert the battery pack into your camera.**

❷ **Open the DC IN jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❸ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).**
The CHARGE lamp in the display window flashes when charging begins.
When the CHARGE lamp goes off, charging is completed.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camera.

Battery remaining indicator

The LCD screen on the camera shows the remaining time for which you can still record or play back images.
This indication may not be entirely accurate depending on the conditions of use and the operating environment.
Charging at 10°C to 30°C (50°F to 86°F) circumstances is recommended.

NP-FM50 battery pack

When you record images in an extremely cold location or using the LCD screen, the operating time becomes short. When using the camera in an extremely cold location, place the battery pack in your pocket or other place to keep it warm, then insert the battery pack into the camera just before recording. When using a pocket heater, take care not to let the heater directly contact the battery.

Charging time

Battery pack	Full charge (min.)
NP-FM50 (supplied)	Approx. 150

Approximate time to charge a completely discharged battery pack using the AC-L10A AC power adaptor at a temperature of 25°C (77°F).

Battery life and number of images that can be recorded/played back

Still image recording*

	NP-FM50 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 150	Approx. 2500
LCD screen OFF	Approx. 180	Approx. 3000

Still image playback**

	NP-FM50 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 270	Approx. 5000

Approximate battery life and number of images that can be recorded/played back with a fully charged battery pack at a temperature of 25°C (77°F), 640×480 image size, standard picture quality and in NORMAL recording mode.

* Recording at about 4-second intervals

**Playing back single images in order at about 3-second intervals

Moving image recording

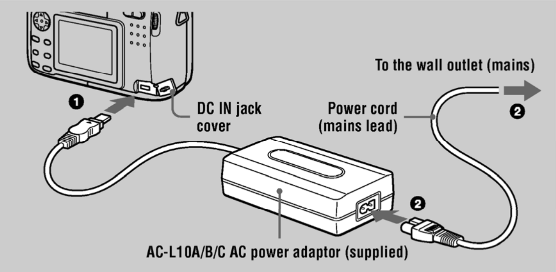
	NP-FM50 (supplied)	
	LCD screen OFF (min.)	LCD screen ON (min.)
Continuous recording	Approx. 210	Approx. 180

Approximate recording time with a fully charged battery pack at a temperature of 25°C (77°F) and 160×112 image size.

Notes

- The battery life and number of images will be decreased if you use your camera at low temperatures, use the flash, repeatedly turn the power on/off or use the zoom.
- The numbers of images shown on tables above are as a guide. The numbers may be smaller depending on conditions.
- The capacity of the "Memory Stick" is limited. The above figures are a guide when you continuously record/play back while replacing the "Memory Stick."
- "----" appears in the display window until the battery usable time is calculated.
- During charging, the indicators in the display window may not appear correctly or may flash in the following cases.
  - — When the battery pack is not installed correctly.
  - — When the AC power adaptor is disconnected.
  - — When the battery pack has malfunctioned.
- When you turn the LCD screen on and off, it takes about one minute for the correct battery remaining time to appear.
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug of the AC power adaptor with a metallic object, as this may cause malfunction.

Using the AC power adaptor


To the wall outlet (mains)
❶
DC IN jack cover
Power cord (mains lead)
❷
❷
AC-L10A/B/C AC power adaptor (supplied)

❶ **Open the DC IN jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❷ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).**

Using a car battery

Use Sony DC adaptor/charger (not supplied).

Using your camera abroad

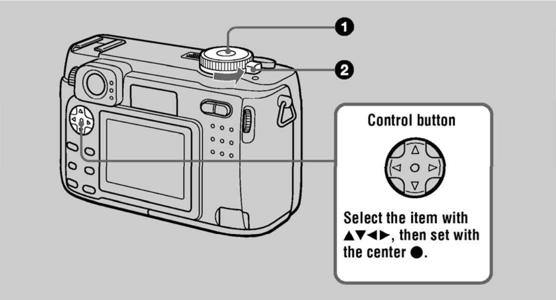
For details, see page 82.

When using the AC power adaptor

Be sure to use it near the wall outlet. If a malfunction occurs, disconnect the plug from the wall outlet.

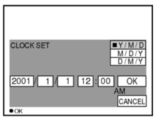
Setting the date and time

When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen appears whenever you turn on your camera.

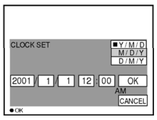


❶ **Set the mode dial to 📷, S, A, M, SCN, ▶, or 🎞.**

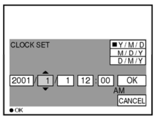
❷ **Slide the POWER switch in the direction of the arrow to turn on the power.**
The POWER ON/OFF (CHG) lamp (green) lights up.
The CLOCK SET screen appears on the LCD screen.
To change the date and time, set the mode dial to SET UP (page 77) and perform the procedure from step ❸.


CLOCK SET
■Y / M / D
M / D / Y
D / M / Y
2001 / 1 / 1 12 : 00 OK
AM
CANCEL
● OK

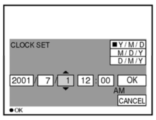
❸ **Select the desired date display format with ▲/▼ on the control button, then press the center ●.**
Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year) or [D/M/Y] (day/month/year).


CLOCK SET
■Y / M / D
M / D / Y
D / M / Y
2001 / 1 / 1 12 : 00 OK
AM
CANCEL
● OK

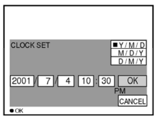
❹ Select the year, month, day, hour or minute item you want to set with ◀/▶ on the control button.
The item to be set is indicated with ▲/▼.



❺ Set the numeric value with ▲/▼ on the control button, then press the center ● to enter it.
After entering the number, ▲/▼ moves to the next item.
If you selected [D/M/Y] in step ❸, set the time on a 24-hour cycle.



❻ Select [OK] with ▶ on the control button, then press the center ● at the desired moment to begin clock movement.
The date and time are entered.



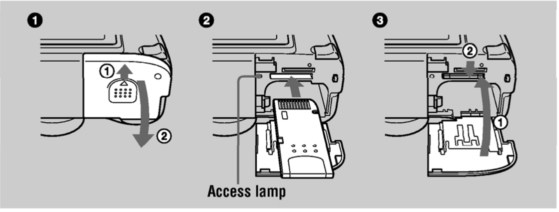
To cancel the date and time setting

Select [CANCEL] with ▲/▼/◀/▶ on the control button, then press the center ●.

Note

If the rechargeable button battery is ever fully discharged (page 80), the CLOCK SET screen will appear again. When this happens, reset the date and time, by starting from step ❸ above.

Inserting the “Memory Stick”



❶ Open the battery/“Memory Stick” cover.
Slide the cover in the direction of the arrow.

❷ Insert the “Memory Stick.”
Insert the “Memory Stick” with the ▶ mark facing toward the battery compartment as illustrated until it clicks.

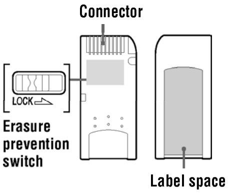
❸ Close the battery/“Memory Stick” cover.

Removing the “Memory Stick”

Open the battery/“Memory Stick” cover, then press the “Memory Stick” once lightly.

Notes

- Insert the “Memory Stick” firmly until it clicks, otherwise a message such as “MEMORY STICK ERROR” will be displayed.
- Never remove the “Memory Stick” or turn off the power while the access lamp is lit up.
- You cannot record or edit images on a “Memory Stick” if the erasure prevention switch is set to the LOCK position.

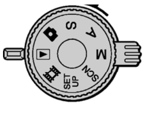


The position and shape of the erasure prevention switch may differ depending on the types of “Memory Stick” used.

Basic operations

How to use the mode dial

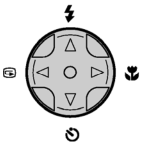
The mode dial switches the function which is used for recording, playback, or editing. Set the dial as follows before starting to operate your camera.



📷:	**To record still images, VOICE mode audio data**
▶:	**To play back or edit images**
🎞:	**To record moving images or Clip Motion images**
SET UP:	**To display the setup items (The SET UP position changes the settings of infrequently-used items.)**
M:	**To record with the shutter speed and aperture set manually**
A:	**To record in the aperture priority mode**
S:	**To record in the shutter speed priority mode**
SCN:	**To record in the SCENE SELECTION mode (Set in advance the SCENE SELECTION in SET UP screen)**

How to use the control button

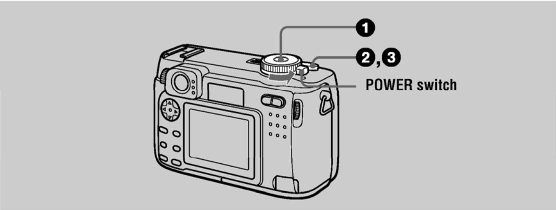
When the menu is not displayed, the control button is used to perform the following operations.



⚡ (▲):	**Recording with flash**
⏲ (▼):	**Recording with self-timer**
⊡ (◀):	**Checking the last recorded image**
🌷 (▶):	**Recording close subjects**

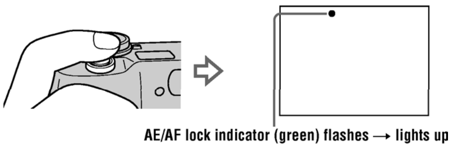
Recording still images

Still images are recorded in JPEG format.
Before recording still images, slide the POWER switch in the direction of the arrow to turn on the power and insert a “Memory Stick.”

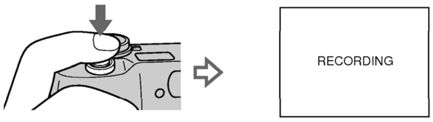


❶ Set the mode dial to 📷, S, A, M or SCN.

❷ Press and hold the shutter button halfway down.
The image freezes momentarily, but is not yet recorded. While the AE/AF lock indicator ● is flashing, the camera automatically adjusts the exposure and focus of the captured image. When the camera finishes the automatic adjustments, the AE/AF lock indicator ● stops flashing, then lights up and the camera is ready for recording.*
If you release the shutter button, the recording will be canceled.



❸ **Press the shutter button fully down.**
The shutter sounds.
"RECORDING" appears on the LCD screen, and the image will be recorded on the "Memory Stick." When "RECORDING" disappears, you can record the next image.



∗ If the flashing AE/AF lock indicator changes to flashing slowly, the subject may be difficult to focus on (dark, poor contrast) or the subject may be extremely close. Release the shutter button, then focus again.

Auto power-off function

If you do not operate the camera for about three minutes during recording or playback, the camera turns off automatically to prevent wearing down the battery. To use the camera again, slide the POWER switch in the direction of the arrow to turn on the camera again. The auto power-off function only operates when the camera is operating using a battery pack. The auto power-off also will not operate when playing back moving images or playing back a SLIDE SHOW (page 65), or when a connector is plugged into the USB jack, the DC IN jack, or the ACC jack.

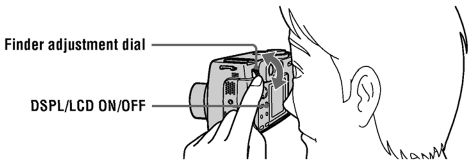
The number of images you can record on a "Memory Stick"

See pages 48 and 53 to 57.

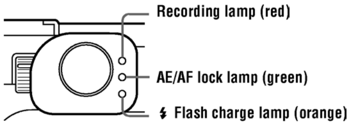
Notes
- Do not touch the lens portion while it is operating.
- When recording a bright subject, the LCD screen color may change after AE/AF lock, but this does not affect the recorded image.
- When you press the shutter button fully down at once in step ❷, the camera starts recording after the automatic adjustment is complete. However, the recording cannot be carried out while the ϟ flash charge lamp (page 21) is flashing. (During this time, the camera is charging the flash.)

Recording images with the finder

You can extend the battery time by turning off the LCD screen and recording using the finder. Turn the finder adjustment dial until the image appears clearly within the finder, then record the image.



Indicators in the finder

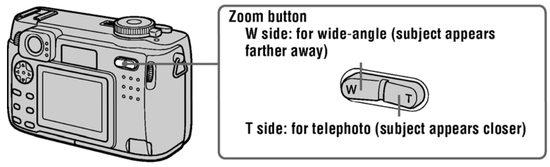


Checking the last recorded image (Quick Review)

You can check the last recorded image by clearing the menu from the screen (page 41) and pressing ◀ (⊜) on the control button.
To return to the normal recording mode: press lightly on the shutter button or press ◀ (⊜) again.
To delete the image: 1. Press MENU. 2. Select [DELETE] with ▶ on the control button, then press the center ●. 3. Select [OK] with ▲ on the control button, then press the center ●.

Using the zoom feature

The lens portion moves during zoom operation. Be careful not to touch the lens portion while it is operating.


Zoom button
W side: for wide-angle (subject appears farther away)
W
T
T side: for telephoto (subject appears closer)

If you cannot get a sharp focus on a close subject

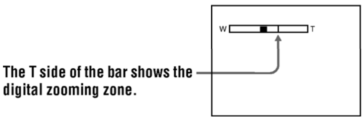
Press the zoom W button repeatedly and move closer to the subject until the focus is sharp.

Minimum focal distance to the subject

W side: About 50 cm (19 3/4 inches) or more
T side: About 50 cm (19 3/4 inches) or more
To record even closer subjects, see page 58.

Digital zoom function

This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing and it starts to function when zoom exceeds 3×.



Using digital zoom

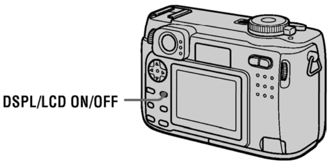
- The maximum zoom magnification is 6×.
- Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the setup settings (page 76).

Notes
- Digital zoom does not work for moving images.
- Use the LCD screen when using the digital zoom function. Digitally zoomed images do not appear in the finder.
- The AF frame (page 94) does not appear on the LCD screen.

The indicators on the LCD screen

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows:

The LCD backlight is turned on.
(All the available indicators are turned on.)
↓
The LCD backlight is turned on.
(Warning messages and manual adjustment items which are set using the jog dial are turned on.)
↓
The LCD backlight is turned off.

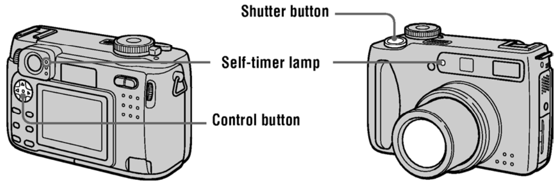


See page 94 for a detailed description of the indicated items.

Notes
- Because of the difference of the portion of the finder and the lens, use the LCD screen when you record a subject closer than 1 m (3 1/4 feet).
- You cannot turn off the LCD screen when [DEMO] or [CONVERSION LENS] are set to [ON] in the SET UP settings.
- You cannot turn off the LCD backlight in SET UP and when displaying the menu.
- You cannot turn off the self-timer indicators and some of the indicators used in advanced operations.
- The indicators on the LCD screen are not recorded.

Using the self-timer

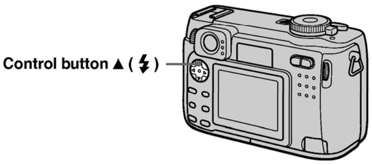
When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.



Clear the menu (page 41), then press the control button ▼ (◷). The ◷ (self-timer) indicator appears on the LCD screen, and about 10 seconds after you press the shutter button, the subject is recorded. The self-timer lamp flashes and the beep sounds after you press the shutter button until the shutter is released. To cancel the self-timer recording, press the control button ▼ (◷) again.

Recording images with the flash

The factory setting is auto (no indicator). In this mode, the flash automatically strobes when the surroundings is dark. To change the flash mode, clear the menu (page 41), then press the control button ▲ (⚡) repeatedly so that the flash mode indicator appears on the LCD screen.



Each time you press the control button ▲ (⚡), the indicator changes as follows.

(No indicator) → ⚡ → ⊘ → (No indicator)

⚡ Forced flash:	The flash strobes regardless of the surrounding brightness.
⊘ No flash:	The flash does not strobe.

You can change the brightness of the flash with [⚡±] (FLASH LEVEL) in the menu settings (page 44).

To reduce the red-eye phenomenon

Set [RED EYE REDUCTION] to [ON] in the setup settings, the flash strobes before recording to reduce the red-eye phenomenon (page 76). When [ON] is selected, 👁 appears on the LCD screen.

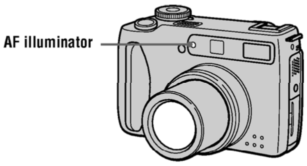
Notes

- When [ISO] is set to [AUTO] in the menu settings, the recommended shooting distance using the built-in flash is 0.3 m to 3.0 m (11 7/8 feet to 9 feet). When it is not set to [AUTO], the flash may be ineffective even if the flash level is changed.
- Attaching a conversion lens (not supplied) may block the light from the flash or cause the lens shadow to appear.
- You cannot use an external flash (not supplied) and the built-in flash at the same time.
- Red-eye reduction may not produce the desired effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions.
- Red-eye reduction effects are also difficult to obtain if you set the shutter to a slow speed in the shutter speed priority mode.
- The flash effect is not obtained easily when you use forced flash in a bright location.
- While charging the flash, the ⚡ flash charge lamp flashes. After the charging is complete, the lamp goes out.

- The flash does not function when recording moving images (excluding Clip Motion) or recording in BURST2 mode.

Recording images with the AF illuminator

The AF illuminator is fill light to focus on a subject easily under dark conditions. Set [AF ILLUMINATOR] (page 76) to [ON] in the setup settings, Kon appears on the LCD screen and the AF illuminator emits light when the shutter button is pressed halfway. It keeps emitting light until the focus is locked.

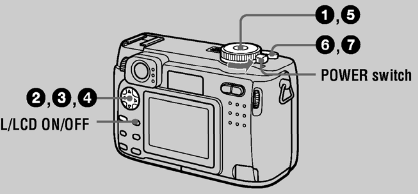


Notes

- If AF illuminator light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. (Approximate 0.3 to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches) distance is recommended.)
- In TWILIGHT mode of the SCENE SELECTION function (page 51), the AF illuminator will emit only when the flash mode is set to ⚡ (Forced flash).
- The AF illuminator will not emit when the LANDSCAPE mode of the SCENE SELECTION function (page 51) is selected or [CONVERSION LENS] (page 77) is set to [ON] in the setup settings.
- Focus is achieved as long as AF illuminator light reaches to the subject even if its light is slightly out of the middle position of the subject.
- The AF illuminator is a very bright light. Although it is safe to use, avoid shining it directly into someone's eyes at a close distance.
- The AF illuminator does not operate when adjusting focus manually.

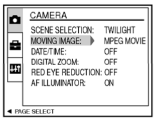
Recording moving images

Moving images with audio are recorded in MPEG format (page 39).
To record moving images, slide the POWER switch in the direction of the arrow to turn on the power and insert a "Memory Stick."



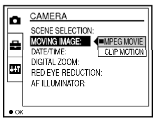
❶ **Set the mode dial to SET UP.**

❷ **Select [📷] (CAMERA) with ▲/▼ on the control button, then press ▶.**



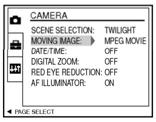
CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: OFF
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON
◀ PAGE SELECT

❸ **Select [MOVING IMAGE] with ▲/▼ on the control button, then press ▶.**



CAMERA
SCENE SELECTION:
MOVING IMAGE: ■MPEG MOVIE
CLIP MOTION
DATE/TIME:
DIGITAL ZOOM:
RED EYE REDUCTION:
AF ILLUMINATOR:
● OK

❹ **Select [MPEG MOVIE] with ▲/▼ on the control button, then press the center ●.**



CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: OFF
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON
◀ PAGE SELECT

❺ **Select the mode dial to 🎞.**

❻ **Press the shutter button fully down.**
"REC" appears on the LCD screen, and the image and sound are recorded on the "Memory Stick."

❼ **Press the shutter button fully down again to stop recording.**
The recording stops.
When selecting the 320 (HQ) size: The recording stops in approximate 15 seconds (page 47).
When selecting the 320×240 or 160×112 sizes: The recording stops when the "Memory Stick" is full.
For details on the image size, see "Setting the image size (IMAGE SIZE)" on page 47".
When [IMAGE SIZE] in the menu setting is set to [320 (HQ)], the maximum recording time is 20 seconds (page 48).

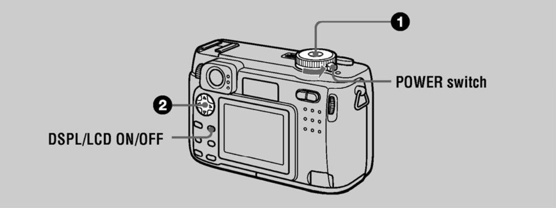
Using the self-timer

When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.
Clear the menu (page 41), then press the control button ▼ (◷). The ◷ (self-timer) indicator appears on the LCD screen, and the recording starts about 10 seconds after you press the shutter button. The self-timer lamp flashes and the beep sounds after you press the shutter button until the shutter is released. To stop the self-timer recording, press the control button ▼ (◷) again.

LCD screen indicators during recording

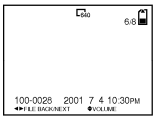
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
These indicators are not recorded. See page 95 for a detailed description of the indicators.

Playing back still images



❶ **Set the mode dial to ▶.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired still image with the control button ◀/▶.**
◀: To display the preceding image.
▶: To display the next image.



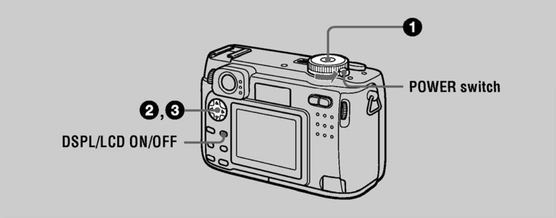
Notes

- You might not be able to correctly play back images recorded with this camera on other equipment.
- You cannot play back on this camera images larger than the maximum image size that can be recorded with this camera.

LCD screen indicators during still image playback

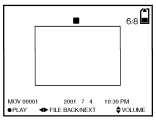
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 96 for a detailed description of the indicators.

Playing back moving images

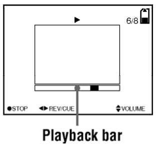


❶ **Set the mode dial to ▶.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired moving image with the control button ◀/▶.**
Moving images are displayed one-size smaller than still images.
◀: To display the preceding image.
▶: To display the next image.



❸ **Select the center ● to start the playback.**
The moving image and sound are played back.
During playback, ▶ (playback) appears on the LCD screen.
To advance or rewind, press the control button ◀/▶ during playback.



To pause playback

Press the center ● on the control button to stop the playback.

To advance or rewind the moving image

Press the control button ◀/▶ during playback.
To return to the normal playback, press the center ● on the control button.

Moving images recorded with the image of [320 (HQ)] (page 47)

The images are displayed over the entire screen in steps ❷ and ❸.

Adjusting the volume

Press the control button ▲/▼ to adjust the volume.

LCD screen indicators during moving image playback

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 96 for a detailed description of the indicators.

Viewing images using a personal computer

You can view data recorded with your camera on a personal computer, modify and attach it to e-mail using application software. This section describes the method for viewing images on a personal computer using the supplied USB cable.
There are two ways to make the USB connection, which are the normal connection and the PTP connection (page 77). This is set using [USB CONNECT] in the setup settings. However, any OS does not conform to [PTP] as of March, 2001. Here describes the way using the [NORMAL] setting.

The factory setting of USB mode is [NORMAL].
The mode can be checked and set as follows.
① Set the mode dial to SET UP.
② Select [SETUP2] with ▲/▼, then press ▶.
③ Select [USB CONNECT] with ▲/▼, then press ▶.
④ Select the connection mode with ▲/▼.

The USB cable is used to connect the camera to a personal computer so that operations can be performed on image files recorded in a "Memory Stick" from the personal computer.
In order to use the USB cable, a USB driver must be installed in the personal computer beforehand.
Be sure to also refer to the operation manuals for your personal computer and the application software.

Notes

- Data recorded with your camera is stored in the following formats. Make sure that applications that support these file formats are installed on your personal computer.
  - — Still images (other than TEXT mode, uncompressed mode and Clip Motion): JPEG format
  - — Moving images/audio: MPEG format
  - — Uncompressed mode still images: TIFF format
  - — TEXT mode/Clip Motion: GIF format
- Depending on your application software, the file size may increase when you open a still image file.
- When you copy the image to the camera from your computer, which was modified with a retouching software and was converted to another file format, the "FILE ERROR" message may appear and you may be unable to open the image.
- Depending on your application software, only the first frame of the Clip Motion file may be played back.

Communications with your computer (for Windows only)
Communications between your camera and your computer may not recover after recovering from Suspend or Sleep.

Recommended computer environment

Recommended Windows environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition
The above OS is required to be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.
CPU: MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.

Recommended Macintosh environment

Macintosh computer with the Mac OS 8.5.1/8.6/9.0/9.1 standard installation
However, note that the update to Mac OS 9.0/9.1 should be used for the following models.
- iMac with the Mac OS 8.6 factory pre-installed and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 factory pre-installed

The USB connector must be provided as standard.
QuickTime 3.0 or newer must be installed (to play back moving pictures).

Notes
- If you connect two or more USB equipment to a single personal computer at the same time, some equipment may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

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- Macintosh and Mac OS, QuickTime are either registered trademarks or trademarks of Apple Computer, Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual

Installing the USB driver

Before connecting your camera to your personal computer, install the USB driver to the computer. The USB driver is included with the application software in the CD-ROM which is supplied with your camera.

Be sure to complete installation of the USB driver before connecting the USB cable. If you connect the USB cable first, you will be unable to install the USB driver properly.

See page 88 for corrective measures if the USB cable was connected before installing the driver and the driver software could not be installed correctly.

For Windows 98/98SE/Me and Windows 2000 users

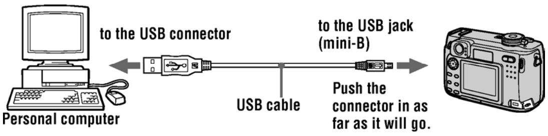
❶ **Turn on your personal computer and allow Windows to load.**
Do not connect the USB cable in this step.

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your personal computer.**
The application software screen appears.

❸ **Click "USB Driver Installation for Windows 98/98SE/Me and Windows 2000".**
USB driver installation starts.

❹ **Follow the on-screen messages to install the USB driver.**
Your personal computer may restart.

❺ **Connect the USB jack (mini-B) on your camera with the USB connector on your personal computer using the supplied USB cable.**



❻ **Insert a "Memory Stick" into your camera, connect the AC power adaptor and turn on your camera.**
"USB MODE" appears on the LCD screen of your camera and the camera is set to communication standby mode. Your personal computer recognizes the camera, and the Windows Add Hardware Wizard starts.

❼ **Follow the on-screen messages to have the Add Hardware Wizard recognize the hardware.**
The Add Hardware Wizard starts twice because two different USB drivers are to be installed. Be sure to allow the installation to complete without interrupting it.

Notes
- Do not connect the USB cable before the USB driver installation is completed in step **4**.
- In step **7**, make sure that a "Memory Stick" is inserted into your camera before installing the USB driver. Otherwise, you will be unable to install the USB driver.

For Macintosh users

• When using MacOS9.1

It is not necessary to install the USB driver. The Macintosh recognizes the camera as a drive simply by connecting it to the Macintosh with the USB cable.

• When using MacOS8.5.1/8.6/9.0

Follow the procedures below to install the driver.

❶ **Turn on your personal computer and allow the Mac OS to load.**

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your personal computer.**

❸ **Double-click the CD-ROM drive icon to open the window.**

❹ **Double-click the icon of the hard disk containing the OS to open the window.**

❺ **Move the following two files from the window opened in step ❸ to the "System Folder" icon in the window opened in step ❹ (drag and drop).**
- Sony USB Driver
- Sony USB Shim

❻ **When "Put these items into the Extensions folder?" appears, click "OK."**

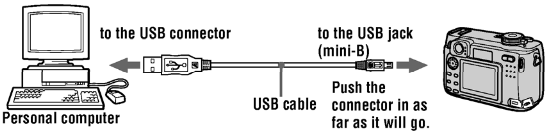
❼ **Restart your personal computer.**

Viewing images

When viewing moving images on a Windows system, RealPlayer, Windows Media Player or other moving image playback applications must be installed. When viewing moving images on a Macintosh system, QuickTime3.0 or later must be installed.

❶ **Turn on the power of your personal computer and allow Windows or Mac OS to load.**

❷ **Connect the USB jack (mini-B) on the camera with the USB connector on your personal computer using the supplied USB cable.**



❸ **Insert a "Memory Stick" into your camera, and connect the AC power adaptor to your camera and then to a wall outlet (mains).**

❹ **Turn on the power of your camera.**
"USB MODE" appears on the LCD screen of the camera.

For Windows 98/98SE/Me and Windows 2000 users

❺ **Open " 💻 My Computer" on Windows and double click the newly recognized drive. (Example: "Removable Disk (E:)")**
The folders inside the "Memory Stick" are displayed.
If the drive is not recognized, see "Troubleshooting" on page 83.

❻ **Select and double-click the desired image/sound file from the folder.**
For the detailed folder and file name, see “Image file storage destinations and image files” on page 38.

Desired file type	Double-click in this order
Still image	“Dcim” folder → “100msdcf” folder → Image file
Moving image*	“Mssony” folder → “Moml0001” folder → Image file*
Audio*	“Mssony” folder → “Momlv100” folder → Audio file*
Clip Motion image	“Dcim” folder → “100msdcf” folder → Image file
E-mail image TIFF image (uncompressed)	“Mssony” folder → “Imcif100” folder → Image file

* Copying a file to the hard disk of your personal computer before viewing it is recommended. If you play back the file directly from the “Memory Stick”, the image and sound may break off.

For Macintosh users

Follow the procedure ❶ – ❹ on page 35.

❺ **Double click the newly recognized icon on the desktop.**
The folders inside the “Memory Stick” are displayed.

❻ **Select and double-click the desired image/sound file from the folder.**

Notes on using your personal computer

“Memory Stick”

- Operation is not guaranteed if you are using a “Memory Stick” that was formatted with a personal computer, or if you used a personal computer to format the “Memory Stick” in your camera through a USB connection.
- Do not optimize the “Memory Stick” on a Windows machine. This will shorten the “Memory Stick” life.
- Do not compress the data on the “Memory Stick.” Compressed files cannot be played back on your camera.

For Windows Me and Windows 2000 users

The following procedures are recommended when disconnecting the USB cable from your personal computer or ejecting the “Memory Stick” from the camera while it is connected to your personal computer.

1 Stop the drive by clicking on the “Unplug/Eject” icon in the task tray.
2 When the message appears confirming the safe removal of the hardware, disconnect the USB cable or eject the “Memory Stick”.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using the supplied retouch software from your personal computer to the camera or when you directly modify the image on the camera, the image format will differ so the “FILE ERROR” message may appear and you may be unable to open the file.
- Depending on your application software, only the first frame of the Clip Motion file may be played back.

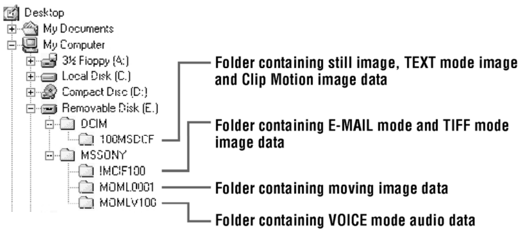
Communications with your personal computer (for Windows only)

Communications between your camera and your personal computer may not recover after recovering from Suspend, Resume, or Sleep.

Image file storage destinations and image files

Image files recorded with your camera are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows Me users (The drive recognizing the camera is “E.”)


Desktop
My Documents
My Computer
3½ Floppy (A:)
Local Disk (C:)
Compact Disc (D:)
Removable Disk (E:)
DCIM
100MSDCF
MSSONY
IMCIF100
MOML0001
MOMLV100
Folder containing still image, TEXT mode image and Clip Motion image data
Folder containing E-MAIL mode and TIFF mode image data
Folder containing moving image data
Folder containing VOICE mode audio data

Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in – E-MAIL mode (page 53) – TIFF mode (page 56) – VOICE mode (page 54) – Burst mode (page 52)
	CLP0□□□□.GIF	• Clip Motion file recorded in NORMAL mode (page 56)
	CLP0□□□□.THM	• Index image file of Clip Motion file recorded in NORMAL mode
	MBL0□□□□.GIF	• Clip Motion file recorded in MOBILE mode (page 56)
	MBL0□□□□.THM	• Index image file of Clip Motion file recorded in MOBILE mode
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 55)
	TXT0□□□□.THM	• Index image file of still image file recorded in TEXT mode

Folder	File	Meaning
IMCIF100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 53)
	DSC0□□□□.TIF	• Uncompressed image file recorded in TIFF mode (page 56)
MOML0001	MOV0□□□□.MPG	• Moving image file recorded normally
MOMLV100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 54)

The numerical portions of the following files are the same.

- A small-size image file recorded in E-MAIL mode and its corresponding image file
- An uncompressed image file recorded in TIFF mode and its corresponding image file
- An audio file recorded in VOICE mode and its corresponding image file
- An image file recorded in TEXT mode and its corresponding index image file
- An image file recorded with Clip Motion and its corresponding index image file

Tips

The digital still camera saves recorded images as digital data. The format of the saved data is called as the file format. The formats that can be used with this camera are as follows:

JPEG format
Most digital still cameras, operating systems of computers, and browser software adopt this format. This format is able to compress files without appreciable deterioration. However, if the image is compressed and saved on repeated occasions, the image will deteriorate. This camera records still images using the JPEG format for normal recording.

GIF format
Using this format, the image will not deteriorate even if the image is compressed and saved on repeated occasions. This format limits the number of colors to 256 colors. This camera records still images using the GIF format in Clip Motion (page 56) or TEXT mode (page 55).

TIFF format
Stores shooting images without compression, so the image does not deteriorate. Most of operating systems and applications correspond to this format. This camera records still images using the TIFF format for the TIFF mode (page 56).

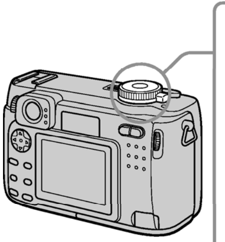
MPEG format
This format is very typical for moving images. This camera records audio using the MPEG format for the moving images recording and the VOICE mode (page 54).

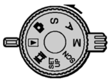
Before performing advanced operations

This section describes the basic control methods that are frequently used for "Advanced operations."

How to use the mode dial

The mode dial switches the function which is used for recording, playback, or editing. Set the dial as follows before starting to operate your camera.

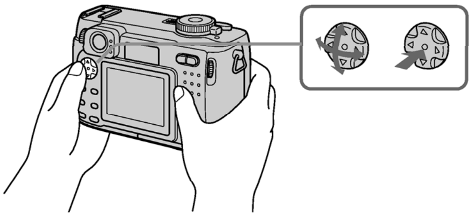




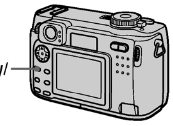
📷 : To record still images, VOICE mode audio data
▶ : To play back or edit images
🎞: To record moving images or Clip Motion images
SET UP: To display the setup items (The SET UP position changes the settings of infrequently-used items.)
SCN: To record in the SCENE SELECTION mode
M: To record with the shutter speed and aperture set manually
A: To record in the aperture priority mode
S: To record in the shutter speed priority mode

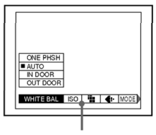
How to use the control button

When the menu or setup screen is displayed, the control button is used to select the buttons, images and menu items displayed on the LCD screen of your camera and modify the settings. The operation methods that are frequently used for "Advanced operations" are described below.



Turning on/off the operation buttons (menu) on the LCD screen

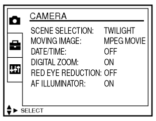

Press MENU to display/clear the menu on the LCD screen.



Menu

Setting up the items in the setup or menu

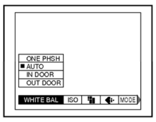
❶ **Set the mode dial to SET UP so that the setup screen appears, or press MENU so that the menu appears.**



CAMERA
SCENE SELECTION: TWILIGHT
MOVING IMAGE: MPEG MOVIE
DATE/TIME: OFF
DIGITAL ZOOM: ON
RED EYE REDUCTION: OFF
AF ILLUMINATOR: ON

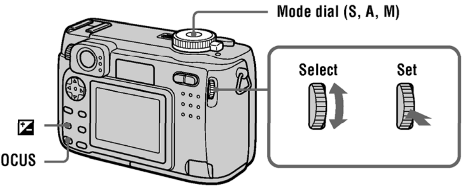
❷ **When the mode dial is set to SET UP or ▶:**
① Press ▲/▼/◀/▶ on the control button to select the item you want to set up.
② Press the center ● on the control button to enter the item.

When the mode dial is set to 📷, S, A, M, SCN, or 🎞:
Press ▲/▼/◀/▶ on the control button to select the setting of the item.
The selected setting is turned to yellow, and the setup is complete.



How to use the jog dial

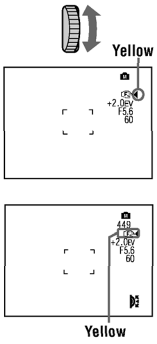
The functions which are used frequently in recording are set up using the jog dial and the following direct buttons. The jog dial is used to change the value in manual adjustments.



❶ **Set the mode dial to S, A, or M.**
The adjustable value number appears at the right corner on the LCD.

❷ **Turn the jog dial to select the item or value number you want to adjust.**
- When the indication ◀ at the right corner on the LCD screen is in yellow, you can select the item. In such cases, go to step ❸.
- When the value number at the right corner on the LCD screen is in yellow, you can adjust the value. (When you press FOCUS, the 🖐 mark appears on value number position.)

When you adjust only the value, the adjustment is complete.



❸ **Press the jog dial.**
The value number turns to yellow. To adjust the value, repeat step ❷.

Viewing the next/previous image using the jog dial during playback

When viewing an image in single-image mode (page 63), you can easily view the next/previous image by turning the jog dial.

Menu settings

Menu items that can be modified differ depending on the positions of the mode dial. The LCD screen shows only the items you can operate at the moment. Factory settings are indicated with ■.

When the mode dial is set to 📷/SCN/S/A/M

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■ AUTO IN DOOR OUT DOOR	Sets the white balance (page 60).
ISO	400 200 100 ■ AUTO	Selects the ISO film speed. When recording under dark situations or recording a fast-moving subject, use a high-number setting. When you record high-quality images, use a low-number setting (except when the mode dial is set to SCN).
▦ (IMAGE SIZE)	■ 20481 536 2048 (3:2) 16001 200 12809 60 64048 0	Selects the image size when recording still images.
◀ (P. QUALITY)	■ FINE	Records still images in the fine image quality mode.
	STANDARD	Records still images in the standard image quality mode.
MODE (REC MODE)	TIFF	Records a TIFF (uncompressed) file in addition to the JPEG file (page 56).
	TEXT	Records a GIF file in black-and-white (page 55).
	VOICE	Records an audio file (with a still image) in addition to the JPEG file (page 54).
	E-MAIL	Records a small-size (320◊240) JPEG file in addition to the selected image size (page 53).
	BURST2	Records two images continuously (page 52).
	■ NORMAL	Records an image using the normal recording mode.
ϟ± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■ NORMAL	Normal setting
	LOW	Makes the flash level lower than normal.

Item	Setting	Description
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■ OFF	Sets the image special effects (page 61).
▯ (SHARPNESS)	+2 +1 ■ 0 –1 –2	Adjusts the sharpness of the image. The ▯ indicator appears (except when the setting is 0).

When the mode dial is set to 🎞 (MOVING IMAGE is set to MPEG MOVIE in the setup settings.)

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■ AUTO IN DOOR OUT DOOR	Sets the white balance (page 60).
▦ (IMAGE SIZE)	320 (HQ) 3202 40 ■ 1601 12	Selects the MPEG image size when recording moving images (page 47).
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■ OFF	Sets the image special effects (page 61).

When the mode dial is set to 🎞 (MOVING IMAGE is set to CLIP MOTION in the setup settings.)

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■ AUTO IN DOOR OUT DOOR	Sets the white balance (page 60).
▦ (IMAGE SIZE)	■ NORMAL MOBILE	Selects the Clip Motion image size (page 56).
ϟ± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■ NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.

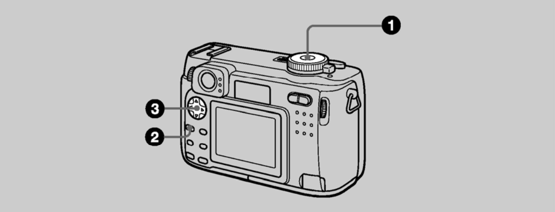
Item	Setting	Description
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■ OFF	Sets the image special effects (page 61).
▯ (SHARPNESS)	+2 +1 ■ 0 –1 –2	Adjusts the sharpness of the image. The ▯ indicator appears (except when the setting is 0).

When the mode dial is set to ▶

Item	Setting	Description
DELETE	OK	Deletes the displayed image (page 67).
	CANCEL	Cancels deleting of the image.
PROTECT	–	Protects images against accidental erasure (page 68).
PRINT	–	Marks the print mark on still images (page 72).
SLIDE*	INTERVAL	Sets the slide show interval. ■ 3 sec/5 sec/10 sec/30 sec/1 min
	REPEAT	■ ON/OFF
	START	Starts the slide show.
	CANCEL	Cancels the slide show.
COPY	OK	Copies an image (page 71).
	CANCEL	Cancels copying of the image.
RESIZE*	2048×1536 1600×1200 1280×960 640×480 CANCEL	Changes the recorded image size (page 70).
ROTATE*	↷ ↶ OK CANCEL	Rotates the still image (page 66).
DIVIDE	OK CANCEL	Divides an moving image (page 74).

* Only in single-image mode.

Setting the image size (IMAGE SIZE)



❶ **Set the mode dial to 📷, SCN, S, A, M, or 🎞.**

❷ **Press MENU.**
The menu appears.

❸ **Select the desired image size from [▦] (IMAGE SIZE) and press ▲/▼.**

Still image sizes:
2048×1536, 2048 (3:2)*, 1600×1200, 1280×960, 640×480

* The image is recorded in the ratio of three to two to fit the printing paper size. Using this image size, the margin of an image is not printed out. However, the slight amount of the upper and lower black portions are displayed on the LCD screen.

Moving image (MPEG movie) sizes:
320 (HQ)*, 320×240, 160×112

* High Quality mode

Clip Motion sizes:
NORMAL (160×120), MOBILE (80×72)

The number of images* or the time that you can record on a “Memory Stick”**

Image size	Quality		Moving image
	STANDARD	FINE	
2048×1536	Approx. 9	Approx. 5	–
2048 (3:2)	Approx. 9	Approx. 5	–
1600×1200	Approx. 15	Approx. 8	–
1280×960	Approx. 22	Approx. 12	–
640×480	Approx. 118	Approx. 48	–
320 (HQ)	–	–	Approx. 20 sec.
320×240	–	–	Approx. 80 sec.
160×112	–	–	Approx. 320 sec.
MOBILE (80×72)	–	–	Approx. 350
NORMAL (160×120)***	–	–	Approx. 40

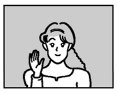
* When MODE (REC MODE) is set to NORMAL.
** The maximum recording time in continuous recording.
*** When recording 10 frames per Clip Motion file.

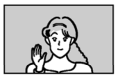
Remaining number of recordable images (page 94)

The remaining number of recordable images is a guideline for when MODE (REC MODE) is set to NORMAL. The actual number of remaining images may differ depending on the recording conditions.

Tips

The size of the image is indicated by the pixel unit. The higher the number of pixels, the more information is included. So, an image that is saved using a large number of pixels is suitable for a large-format print and one that is saved using a smaller number of pixels is suitable for attaching to an E-mail. Normally, an image is recorded in the ratio of four to three to fit the monitor ratio. This camera can also record the image in the ratio of three to two to accommodate the most common printing paper size. This is the same ratio as the one used in photo-developing shops.

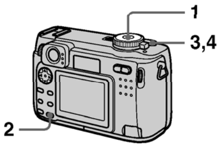

2048×1536 (4:3)


2048 (3:2)

Recording with the exposure fixed (AE LOCK)

Mode dial: 📷/S/A/M/SCN

Once you press AE LOCK, the exposure, now captured, is fixed. For instance, this function is convenient in the following use:
Measure the exposure of the desired portion of the subject using the spot light-metering function and fix its exposure value by pressing AE LOCK. Then, recompose the picture.



1 **Set the mode dial to 📷, S, A, M or SCN.**

2 **Target the subject that has desired exposure value, then press AE LOCK.**
The exposure is fixed and the AE-L mark appears.

3 **Target the subject you want to record and press and hold the shutter button halfway down.**
The focus is automatically adjusted.

4 **Press down the shutter button.**

To release AE LOCK

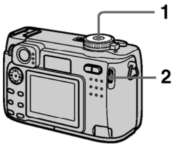
Carry out one of the followings:
- Press AE LOCK again after step **2**.
- Release your finger from the shutter button after step **3**.
- Press down the shutter button in step **4**.

Recording with the manual adjustments

Mode dial: S/A/M

Shutter speed priority mode

Once the shutter speed is adjusted manually, the aperture will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. Using the higher shutter speed, you can record a fast-moving subject with its motion frozen. And using the lower shutter speed, you can record the flow motion of a moving subject.

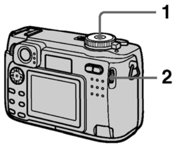


1 **Set the mode dial to S.**

2 **Select a shutter speed with the jog dial, then press the jog dial.**
The shutter speed can be selected from 8" to 1/1000.

Aperture priority mode

Once the aperture is adjusted manually, the shutter speed will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. Selecting a lower aperture value opens the lens iris. Using a lower aperture value, you can record a subject with its background unclear. And using a higher aperture value, you can record both the subject and the background stand out clearly.

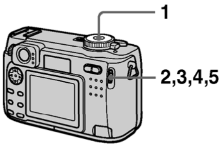


1 **Set the mode dial to A.**

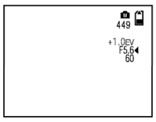
2 **Select an aperture value with the jog dial, then press the jog dial.**
The aperture value can be selected from F2 to F8.

Manual exposure mode

You can manually adjust the shutter speed and aperture values to achieve the desired shooting condition according to your purpose. The exposure value appears on the LCD screen (page 59). And you can also adjust the aperture value and the shutter speed value according to your taste. 0 EV is the most suitable value set by the camera.



1 **Set the mode dial to M.**



2 **Select the aperture value indication with the jog dial, then press the jog dial.**

3 **Select the aperture value with the jog dial, then press the jog dial.**

4 **Select the shutter speed value indication with the jog dial, then press the jog dial.**

5 **Select the shutter speed value with the jog dial, then press the jog dial.**
For details on available values, see “Shutter speed priority mode” on page 50, or “Aperture priority mode” on page 50.

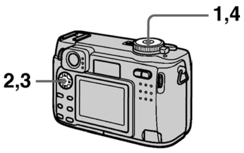
Note

If the setting is not appropriate in aperture priority mode, shutter speed priority mode, or manual exposure mode, the setting value indicator on the LCD screen flashes. You can record in this setting, we, however, recommend that you adjust the flashed-value again.

Records images according to shooting conditions (SCENE SELECTION)

Mode dial: SCN

This camera has preset three SCENE SELECTION modes. Each mode is suitable for the following situations; night scene, landscape, and portrait.



1 **Set the mode dial to SET UP.**
The setup screen appears.

2 **Select [📷] (CAMERA) with ▲/▼, [SCENE SELECTION] with ▶/▲/▼, then press ▶.**

3 **Select the desired setting, then press ●.**

☽ TWILIGHT mode
Allows you to record bright subjects in dark places without losing the dark atmosphere of the surroundings. The shutter speed becomes slower, so we recommend that you use a tripod to prevent shaking.

LANDSCAPE mode
Focuses only on a distant subject to record landscapes, etc.

PORTRAIT mode
Suits for portrait recordings. Backgrounds blurred away, and the frontward person is sharpened.

4 **Set the mode dial to SCN.**
The selected setting is loaded.

To cancel the SCENE SELECTION function

Set the mode dial to 📷, S, A, M, 🎞, or ▶.

Notes

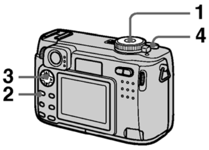
- You can focus only on distant subjects in LANDSCAPE mode.
- Set the forced flash ⚡ when you use the flash in the following modes:
  - — TWILIGHT mode
  - — LANDSCAPE mode
- When using the SCENE SELECTION mode, the AF illuminator (page 25) does not emit in the following conditions:
  - — TWILIGHT mode: when the flash mode is not set to the ⚡ forced flash mode
  - — LANDSCAPE mode: you cannot use the AF illuminator.

> ***Tips***
>
> Under normal recording conditions, the camera automatically makes various adjustments, such as those for the focus, iris, exposure, and white balance, as it shoots. However, you may not be able to carry out your desired shooting depending on shooting conditions. The SCENE SELECTION function provides you with near-optimum adjustments to suit your shooting situation.

Recording two images continuously

Mode dial: 📷/S/A/M/SCN

This mode is used for a continuous recording.



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◀/▶, [BURST2] with ▲/▼.**
4. **Record the image.**

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

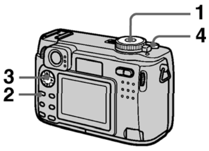
Notes

- You cannot use the flash in this mode.
- During recording in this mode, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- The recording interval is approximate 0.6 second.
- You cannot select a shutter speed slower than 1" when recording two images continuously.

Recording still images for e-mail (E-MAIL)

Mode dial: 📷/S/A/M/SCN

In the E-MAIL mode, a small-size image which is suitable for e-mail transmission is also recorded at the same time as recording a normal still image. (The size of the normal still image is set using [▦] (IMAGE SIZE) in the menu settings (page 47).)



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◀/▶, [E-MAIL] with ▲/▼.**
4. **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB) in E-MAIL mode

Image size	Quality	
	STD	FINE
2048×1536	Approx. 8	Approx. 4
2048 (3:2)	Approx. 8	Approx. 4
1600×1200	Approx. 14	Approx. 8
1280×960	Approx. 21	Approx. 12
640×480	Approx. 95	Approx. 43

Remaining number of recordable images (page 94)

The actual number of remaining images may differ depending on the recording conditions.

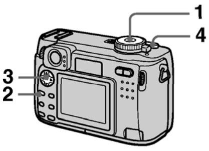
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Adding audio files to still images (VOICE)

Mode dial: 📷/S/A/M/SCN

In the VOICE mode, the audio is also recorded at the same time as recording a still image. You can vividly record the situation with audio.



1. **Set the mode dial to 📷, S, A, M or SCN.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◀/▶, [VOICE] with ▲/▼.**
4. **Record the image.**
   If you press and release the shutter button, sound is recorded for five seconds.
   If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a "Memory Stick" (8 MB) in VOICE mode*

Image size	Quality	
	STD	FINE
2048×1536	Approx. 8	Approx. 4
2048 (3:2)	Approx. 8	Approx. 4
1600×1200	Approx. 13	Approx. 7
1280×960	Approx. 19	Approx. 11
640×480	Approx. 56	Approx. 34

* When recording 5-second audio.

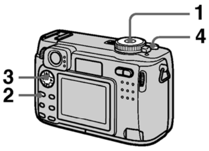
To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Recording text documents (TEXT)

Mode dial: 📷

The TEXT mode is suitable for recording a document to emphasize its character by the black and white colors. The LCD screen also turns to black and white, and the image is recorded in the GIF format.



1. **Set the mode dial to 📷.**
2. **Press MENU.**
   The menu appears.
3. **Select [MODE] (REC MODE) with ◀/▶, [TEXT] with ▲/▼.**
4. **Record the image.**

The number of images that you can record on a "Memory Stick" (8 MB) in TEXT mode*

Image size	Number of images
2048×1536	Minimum 14
2048 (3:2)	Minimum 16
1600×1200	Minimum 24
1280×960	Minimum 36
640×480	Minimum 121

* The maximum number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

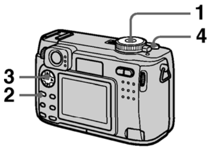
Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Writing and reading data take more time than normal recording.
- When the mode dial is set to S, A, M, or SCN images can be recorded, but the image may be bleached out or may be turned black.
- Remaining number of recordable images is not displayed.
- The number of recordable images is the same regardless of whether [◀⁝] (P. QUALITY) is set to STANDARD or FINE.

Recording still images as uncompressed files (TIFF)

Mode dial: 📷/S/A/M/SCN

Records the images without compression, so the image does not deteriorate. Images recorded in this mode are suitable for printing with a high-quality image. The JPEG (compressed) format image is also recorded with the TIFF format image.



1 Set the mode dial to 📷, S, A, M or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [TIFF] with ▲/▼.

4 Record the image.
The number of images that you can record on a "Memory Stick" (16 MB) in TIFF mode is approx. 1.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

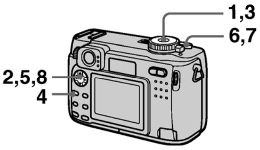
Notes

- JPEG images are recorded in the image size selected by the [▦] (IMAGE SIZE) menu (page 47). TIFF images are recorded in [2048×1536] size other than when [2048 (3:2)] is selected.
- Writing data takes more time than in normal recording.
- The supplied "Memory Stick" (8 MB) does not have sufficient capacity to record uncompressed images.

Creating Clip Motion Files

Mode dial: 🎞

Clip Motion is an animation function that plays back still images in succession. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [📷] (CAMERA) with ▲/▼, [MOVING IMAGE] with ▶/▲/▼, [CLIP MOTION] with ▲/▼, then press ●.

3 Set the mode dial to 🎞.

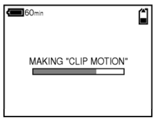
4 Press MENU.
The menu appears.

5 Select [▦] (IMAGE SIZE) with ◀/▶, the desired mode with ▲/▼.

NORMAL (160×120)
Clip Motion of up to 10 frames can be recorded. This is suitable for use on home pages, etc.

MOBILE (80×72)
Clip Motion of up to 2 frames can be recorded. This is suitable for use with portable data terminals.

6 Record the image for the first frame.



Before carrying out step **8**, the images are temporarily stored in memory. These images are not recorded on the "Memory Stick", yet.

7 Record the image for the next frame.
Image recording can be repeated up to the maximum number of recordable frames.

8 Press ●.
All the frame images are recorded on the "Memory Stick".

To delete some or all the frame images while making a Clip Motion recording

① Press the control button ◀ (⊜) in step **6** or **7**.
The recorded frame images are played back in turn and stop at the last image.
② Press MENU, and select [DELETE LAST] or [DELETE ALL], then press ●.
③ Select [OK], then press ●.
When [DELETE LAST] is selected in step ②, each time you repeat step ③, the recorded frame is deleted from the newest one.

The number of Clip Motion frames that you can record on a "Memory Stick" (8 MB)

Image size	Number of images
NORMAL (160×120)	Approx. 40*
MOBILE (80×72)	Approx. 350

* When recording 10 frames per Clip Motion file

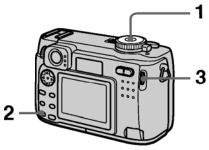
Notes

- You cannot change the image size partway through a Clip Motion recording.
- Reading and writing data take more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.
- All the frame images are immediately recorded on the "Memory Stick" if the mode dial is switched or the power is turned off.

Setting the distance to the subject

Mode dial: 📷/S/A/M/SCN/🎞

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.



1 Set the mode dial to 📷, S, A, M, SCN or 🎞.

2 Press FOCUS.
The focus is fixed and the ⓕ (manual focus) indicator appears.

3 Turn the jog dial to select the desired focus setting.
You can select from 15 focus settings (unit: m) including the ⓕ position:
0.1, 0.2, 0.3, 0.5, 0.8, 1.0, 1.5, 2, 3, 5, 7, 10, 15, and ∞ (infinity)

To reactivate auto focusing

Press FOCUS again and the focal point information disappears.

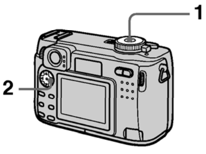
Notes

- Focal point information may not completely show the correct distance. Use the information as a guide.
- The focus preset cannot be set when attaching a conversion lens.
- Focusing error increases if the lens is pointed up or down.
- If you shoot a subject within 0.5 m (19 3/4 inches) while the zoom is set to the T side, you cannot get a clear focus. In such cases, the focal point information flashes. Press the zoom W button until the indicator stops flashing.

Recording images in macro

Mode dial: 📷/S/A/M/SCN/🎞

The macro recording is used when zooming up a little subject, such as flowers, insects.



1 Set the mode dial to 📷, S, A, M, SCN or 🎞.

2 Clear the menu, and press the control button ▶ (🌷).
The 🌷 (macro) indicator appears on the LCD screen.
You can record a subject as close as about 4 cm (1 5/8 inches) from the lens surface with the zoom set all the way to the W side, or about 20 cm (8 inches) with the zoom set all the way to the T side.

To return to normal recording mode

Press the control button ▶ (🌷) again.
The 🌷 indicator disappears.

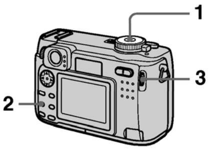
Notes

- You cannot record images in macro with the LANDSCAPE mode of the SCENE SELECTION function.
- When recording images in macro, use the LCD screen. If you record using the finder, the range visible in the finder may differ from the actual recording range.

Adjusting the exposure (EXPOSURE)

Mode dial: 📷/S/A/SCN/🎞

Adjusts the exposure value which is set in the automatic adjustment.



1 Set the mode dial to 📷, S, A, SCN or 🎞.

2 Press ☒.

3 Select the desired exposure value with the jog dial.
Adjust the exposure value while checking the brightness of the background.
You can select values ranging from +2.0 EV to –2.0 EV in steps of 1/3 EV.

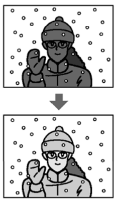
Note

If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

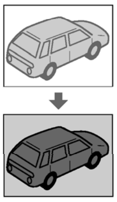
Tips

Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as illustrated below, we recommend that you adjust the exposure manually. When recording a backlighted subject or a subject in the snow, set it toward +, and when recording a dark subject with fully displayed on the LCD screen, set it toward –.

Set the exposure toward +



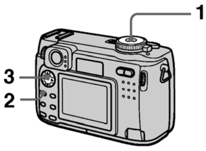
Set the exposure toward –



Adjusting the white balance (WHITE BALANCE)

Mode dial: 📷/S/A/M/SCN/🎞

Normally, the white balance is automatically adjusted (AUTO). When you record with the shooting condition fixed or under the specific lighting condition, you can manually adjust the white balance.



1. **Set the mode dial to 📷, S, A, M, SCN or 🎞.**
2. **Press MENU.**
   The menu appears.
3. **Select [WB] (WHITE BAL) with ◀/▶, the desired setting with ▲/▼.**

   ONE PUSH (◪)
   Adjusting the white balance depending on the light source

   AUTO (No indicator)
   Adjusts the white balance automatically
   Under fluorescent lighting

   IN DOOR (💡)
   - Places where the lighting condition changes quickly
   - Under bright lighting such as photography studios
   - Under sodium or mercury lamps

   OUT DOOR (☀)
   Recording a sunrise/sunset, night scene, neon signs, or fireworks

To shoot in one-push white balance mode

① Select [ONE PUSH]. The ◪ indicator appears.
② Shoot a white object such as paper full under the same situation you will shoot.
③ Press ▲.
The ◪ indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

To reactivate auto adjustment

Select [AUTO] with ▲/▼ in step **3**.

Notes

- The ◪ indicator means:
  Slow flashing: white balance is not set or was not able to be set.
  Quick flashing: white balance is being adjusted (after you pressed ▲).
  Lit steady: white balance has been set.
- If the ◪ indicator keeps flashing even when you press ▲, record in automatic white balance mode.

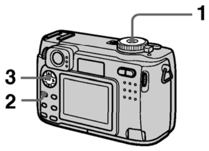
Tips

The image is susceptible to lighting conditions. The image looks blue under sunlight in the summer, and looks red under mercury lamps. Human eyes can resolve these problems. However, the camera cannot resolve the problem without making adjustments. Normally, the camera adjusts it automatically, but, if the image appears in strange colors, we recommend that you change the white balance mode.

Enjoying picture effects (P. EFFECT)

Mode dial: 📷/S/A/M/SCN/🎞

You can digitally process images to obtain special effect.



1. **Set the mode dial to 📷, S, A, M, SCN or 🎞.**
2. **Press MENU.**
   The menu appears.
3. **Select [PFX] (P. EFFECT) with ◀/▶, the desired mode with ▲/▼.**

   SOLARIZE
   The light contrast is clearer and the picture looks like an illustration.

   B&W
   The picture is monochrome (black and white).

   SEPIA
   The picture is sepia-toned like an old photograph.

   NEG.ART
   The color and brightness of the picture are reversed as in a negative.

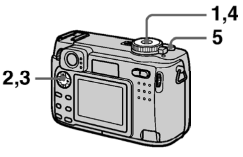
   OFF
   Does not use the picture effect function.

To cancel picture effect

Select [OFF] with ▲/▼ in step **3**.

Recording the date and time on the still image (DATE/TIME)

Mode dial: 📷/S/A/M/SCN

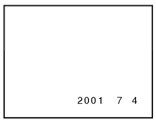


1. **Set the mode dial to SET UP.**
   The setup screen appears.
2. **Select [📷] (CAMERA) with ▲/▼, [DATE/TIME] with ▶/▲/▼, then press ▶.**
3. **Select the date and time setting with ▲/▼, then press ●.**

   DAY & TIME
   Imposes the date, hour, and minute.

   DATE
   Imposes the year, month, and day.

   OFF
   Does not impose the date and time.
4. **Set the mode dial to 📷, S, A, M, or SCN.**
5. **Record the image.**
   The date and time do not appear on the LCD screen during shooting. These appear during playback only.



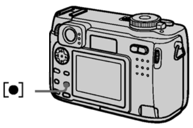
Notes

- If you select [DATE] in step **3**, the date is imposed onto the image in the order selected with "Setting the date and time" (page 15).
- The date and time are not superimposed onto moving images or Clip Motion images.

Using the spot light-metering function

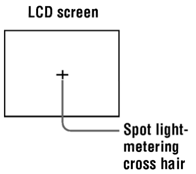
Mode dial: 📷/S/A/M/SCN/🎞

Use this function when there is backlight or when there is strong contrast between the subject and the background, etc. Position the point you want to record on the spot light-metering cross hair.



Press [●] to activate the spot light-metering function.

Position the point you want to record at the spot light-metering cross hair. Record the picture when the automatic adjustment has been completed.

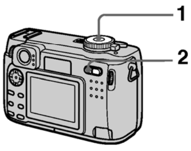


▶ Various playback

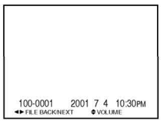
Playing back three or nine images at once

Mode dial: ▶

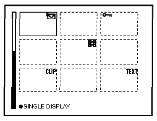
You can display multiple images on the LCD screen at one time using the zoom buttons.



1. **Set the mode dial to ▶.**
2. **Press the zoom W button repeatedly.**
   The LCD screen display changes as follows:
   - Single (single-image) screen


100-0001 2001 7 4 10:30PM
◀▶ FILE BACK/NEXT ⇕VOLUME

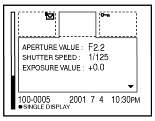
- Index (nine-image) screen



●SINGLE DISPLAY

⬇

- Triple-image screen


APERTURE VALUE : F2.2
SHUTTER SPEED : 1/125
EXPOSURE VALUE : +0.0
100-0005 2001 7 4 10:30PM
●SINGLE DISPLAY

The image indicated by the yellow frame in the index screen is displayed in the middle of the triple-image screen with the recording information. To display the other information, press the control button ▲/▼.

The following marks are displayed on each image according to the image type and settings.
🎞 : Moving image file
[♪]: VOICE mode file
✉ : E-mail file
🖨 : Print mark
🔑 : Protect mark
TEXT: TEXT file
TIFF: TIFF file
CLIP: Clip Motion file
(No mark): Normal recording (no settings)

To display the next (previous) index screen

Press the control button ▲/▼/◀/▶.

To return to normal playback (single-image)

- Press the zoom T button repeatedly.
- Press the control button ●.

Note

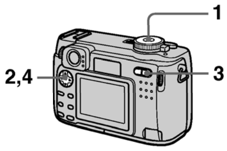
When viewing an image recorded in Clip Motion or TEXT mode on the index screen, the image may appear different from the actual image.

Tips

When the triple-image screen is displayed, pressing MENU opens the menu including [PRINT], [PROTECT], and [DELETE]. For details on these items, see pages 67, 68, or 72. To close the menu, press MENU again. The menu disappears and the recording information is indicated.

Enlarging a part of the still image (Zoom and trimming)

Mode dial: ▶



1. **Set the mode dial to ▶.**
2. **Display the image to be enlarged.**
3. **Zoom in/out the image with the zoom T/W buttons.**
4. **Press the control button repeatedly to select the desired portion of the image.**
   ▲: The image moves downward
   ▼: The image moves upward
   ◀: The image moves rightward
   ▶: The image moves leftward

To return to the normal size

Press the control button ●.

To record an enlarged image (trimming)

① Press MENU after zooming.
② Select [TRIMMING] with ▶, then press ●.
③ Select the image size with ▲/▼, then press ●.
The image is recorded and the image on the LCD screen returns to the normal size after recording.

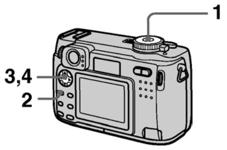
Notes

- You cannot zoom moving images.
- You can zoom images recorded in TEXT mode, but cannot trim them.
- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is left even if you enlarge the image.
- The enlarged image is recorded as the newest file.
- If you trim an image, the remaining "Memory Stick" capacity will be decreased.
- If the remaining "Memory Stick" capacity is not sufficient, you may be unable to trim an image.
- You cannot trim to an image of 3:2.

Playing back the still images in order (SLIDE)

Mode dial: ▶

This function is useful for checking the recorded images or for presentations, etc.



1. **Set the mode dial to ▶.**
2. **Press MENU.**
   The menu appears.
3. **Select [SLIDE], then press ●.**
   Set the following items.

   INTERVAL
   You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), 5 sec (5 seconds), or 3 sec (3 seconds).

   REPEAT
   ON: Plays back images in a continuous loop.
   OFF: After all images have been played back, the slide show ends.
4. **Select [START], then press ●.**
   The slide show begins.

To cancel the SLIDE SHOW setting

Select [CANCEL] with ▲/▼ in step **3**, then press ●.

To stop the SLIDE SHOW playback

Press ●, select [EXIT] with ▶, then press ●.

To skip to the next/previous image during the SLIDE SHOW

Select ◀/▶ at the lower-left on the LCD screen, then press ●.

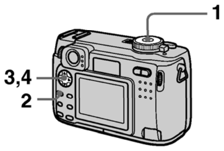
Note

The interval setting time may vary depending on the image size.

Rotating a still image (ROTATE)

Mode dial: ▶

You can rotate the image recorded in portrait orientation and display it in landscape orientation.



1. **Set the mode dial to ▶, and display the image to rotate.**
2. **Press MENU.**
   The menu appears.
3. **Select [ROTATE] with ◀/▶, then press ●.**
4. **Rotate the image clockwise ↷ or counterclockwise ↶, select [OK] with ▲/▼, then press ●.**

To cancel rotation

Select [CANCEL] with ▲/▼ in step **4**, then press ●.

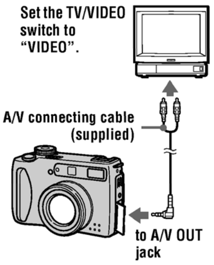
Notes

- You cannot rotate protected or uncompressed images, or images recorded in TEXT mode.
- You may not be able to rotate images recorded with other equipment.
- Also, when viewing images on a computer, the image rotation information may not be reflected depending on the application software.

Viewing images on a TV screen

Mode dial: ▶

Before connecting your camera, be sure to turn off the TV.


Set the TV/VIDEO switch to "VIDEO".
A/V connecting cable (supplied)
to A/V OUT jack

1. **Connect the A/V connecting cable to the A/V OUT jack of your camera and to the audio/video input jacks of the TV.**
   If your TV has stereo type input jacks, connect the audio plug (black) of the A/V connecting cable to the Lch jack.
2. **Turn on the TV and start playback on your camera.**
   The playback image appears on the TV screen.

Notes

- You cannot use a TV that has an antenna (aerial) connector only.
- When viewing a still image on the TV, the black band may appear around the image.

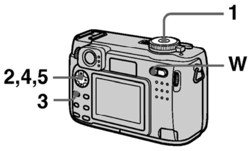
▶ Editing

Deleting images (DELETE)

Mode dial: ▶

You can delete unwanted files.

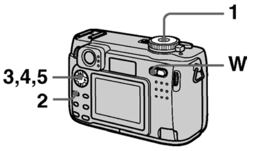
In single-image or triple-image mode



1. **Set the mode dial to ▶.**
2. **In single-image mode:**
   Display the image you want to delete with ◀/▶.

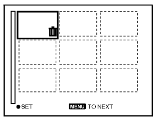
   In triple-image mode:
   Press the zoom W button twice to turn to the triple-image mode. Display the image you want to delete with ◀/▶.
3. **Press MENU.**
   The menu appears.
4. **Select [DELETE] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**
5. **Select [OK] with ▲/▼, then press ●.**
   The image (or the middle-positioned image in triple-image mode) is deleted.

In index mode



1. **Set the mode dial to ▶, then display the index screen with the zoom W button.**
2. **Press MENU.**
   The menu appears.
3. **Select [DELETE] with ◀/▶, then press ●.**
4. **Select [ALL] or [SELECT] with ◀/▶, then press ●.**
5. **When you select [ALL]**
   Select [ENTER] with ◀/▶, then press ●.
   All the unprotected images are deleted.

   When you select [SELECT]
   ① Select the images to be deleted with the control button, then press ●.
   To cancel, press ● again.
   Repeat this step to select other images.
   The 🗑 (delete) indicator appears on the selected images.



   ② Press MENU.
   ③ Select [OK] with ◀/▶, then press ●.

To cancel deleting

Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

Note

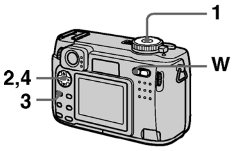
If there are files on the “Memory Stick” with names having the same last 4 digits as the file name of the image to be deleted, these files are also deleted at the same time.

Preventing accidental erasure (PROTECT)

Mode dial: ▶

Protects images against accidental erasure.

In single-image or triple-image mode



1 **Set the mode dial to ▶.**

2 **In single-image mode**
Display the image you want to protect with ◀/▶.

In triple-image mode
Press the zoom W button twice to turn to the triple-image mode. Display the image you want to protect with ◀/▶.

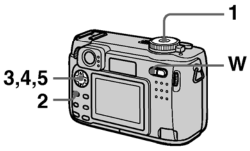
3 **Press MENU.**
The menu appears.

4 **Select [PROTECT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**
The displayed image (or the middle-positioned image in triple-image mode) is protected.
The ⊶ indicator appears on the image.

To release protection

Press ● again in step **4**. ⊶ indicator disappears.

In index mode



1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

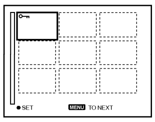
2 **Press MENU.**
The menu appears.

3 **Select [PROTECT] with ◀/▶, then press ●.**

4 **Select [ALL] or [SELECT] with ◀/▶, then press ●.**

5 **When you select [ALL]**
Select [ON] with ◀/▶, then press ●.
All the images in the “Memory Stick” are protected.

When you select [SELECT]
The frame of the selected image turns green.
① Select the images to be protected with the control button, then press ●.
To cancel, press ● again.
Repeat this step to select other images.
The ⊶ indicator appears on the selected images.



② Press MENU.
③ Select [OK] with ◀/▶, then press ●.

To release protection

If you selected [ALL] in step **4**, select [OFF] then press ●. If you selected [SELECT] in step **4**, select the images to be unprotected with the control button. Select [OK] with ◀/▶, then press ●.

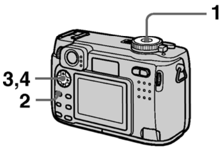
To cancel protection

Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

Changing the recorded still image size (RESIZE)

Mode dial: ▶

You can change the image size of the recorded image.



1 **Set the mode dial to ▶, then display the image of which you want to change the size.**

2 **Press MENU.**
The menu appears.

3 **Select [RESIZE] with ◀/▶, then press ●.**

4 **Select the desired size with ▲/▼, then press ●.**
2048×1536, 1600×1200, 1280×960, 640×480
The resized image is recorded.

To cancel changing the size

Select [CANCEL] with ▲/▼ in step **4**, then press ●.

Notes

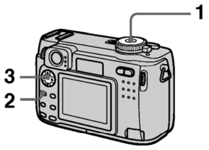
- The original image is retained even after resizing.
- You cannot change the size of images recorded in TEXT mode, moving images, uncompressed images, or Clip Motion images.
- The resized image is recorded as the newest file.
- If you resize an image, the remaining “Memory Stick” capacity will be decreased.
- When you change from a small size to a large size, the picture quality deteriorates.
- If the remaining “Memory Stick” capacity is not sufficient, you may not be able to resize an image.
- You cannot resize to an image of 3:2.

Copying images (COPY)

Mode dial: ▶

You can copy images to another “Memory Stick.”

In single mode



1 **Set the mode dial to ▶, then display the image which you want to copy.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, [OK] with ▲/▼, then press ●.**
“MEMORY STICK ACCESS” appears.

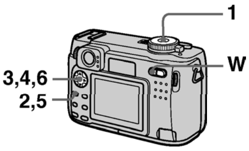
4 **When “CHANGE MEMORY STICK” appears, eject the “Memory Stick.”**
“INSERT MEMORY STICK” appears.

5 **Insert the “Memory Stick” on which to copy the image.**
“RECORDING” appears. When copying is completed, “COMPLETE” appears.
To end copying, select [EXIT] with ◀/▶, then press ●.

To copy the image to another “Memory Stick”

Select [CONTINUE] with ▲/▼, press ●, then repeat steps **4** and **5**.

In INDEX mode

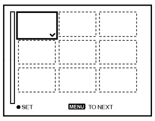


1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, [Select] with ▲/▼, then press ●.**
The frame of the selected image turns green.

4 **Select the image to copy with the control button, then press ●.**
To cancel, press ● again. Repeat this step to select other images.
The ✓ (select) indicator appears on the image.



5 **Press MENU.**
The menu appears.

6 **Select [ENTER] with ◀/▶, then press ●.**
“MEMORY STICK ACCESS” appears.

7 When “CHANGE MEMORY STICK” is displayed, eject the “Memory Stick.”
“INSERT MEMORY STICK” appears.

8 Insert another “Memory Stick.”
“RECORDING” appears. When copying is completed, “COMPLETE” appears.
To end copying, select [EXIT] with ▲/▼, then press ●.

To copy the image to another “Memory Stick”

Select [CONTINUE] with ▲/▼, press ●, then repeat steps **7** and **8**.

To cancel copying part-way

Select [CANCEL] with ◀/▶ in step **3** or [EXIT] with ◀/▶ in step **6**, then press ●.

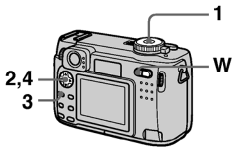
Notes
- If you do not select [EXIT] after “COMPLETE” appears and instead insert a new “Memory Stick,” the same image is copied again.
- You cannot copy uncompressed images.
- You cannot copy images that are bigger than 5 MB at once. If “NOT ENOUGH MEMORY” appears or ✓ flashes on the INDEX screen, cancel some images to copy and try again.

Selecting still images to print (PRINT)

Mode dial: ▶

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.

In single-image or triple-image mode



1 Set the mode dial to ▶.

2 In single-image mode
Display the image you want to print with ◀/▶.

In triple-image mode
Press the zoom W button twice to turn to the triple-image mode.
Display the image you want to print with ◀/▶.

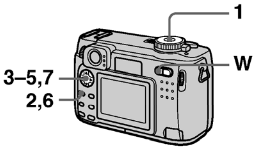
3 Press MENU.
The menu appears.

4 Select [PRINT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.
The 🖨 (print) mark is marked on the displayed image (or the middle-positioned image in triple-image mode).

To unmark the print mark

Press ● again in step **4**. 🖨 mark disappears.

In index mode



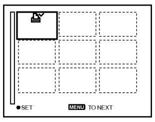
1 Set the mode dial to ▶, then display the index screen with the zoom W button.

2 Press MENU.
The menu appears.

3 Select [PRINT] with ◀/▶, then press ●.

4 Select [SELECT] with ◀/▶, then press ●.
When marking the 🖨 mark, you cannot select [ALL].
The frame of the selected image turns green.

5 Select the images to be marked with the control button, then press ●.
To cancel, press ● again.
Repeat this step to select other images. The 🖨 mark appears on the selected image.



6 Press MENU.
The menu appears.

7 Select [OK] with ◀/▶, then press ●.

To unmark selected print marks

Select the images to be unmarked in step **5** with the control button, then press ●.

To unmark all the print marks

Select [ALL] with ◀/▶ in step **4**, then press ●. Select [OFF] with ◀/▶, then press ●.
The 🖨 marks on all images are unmarked.

To cancel marking the print mark

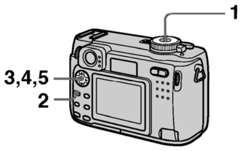
Select [CANCEL] with ◀/▶ in step **4** or select [EXIT] with ◀/▶ in step **7**, then press ●.

Notes
- You cannot mark moving images, Clip Motion images or images recorded in TEXT mode.
- If you mark an image recorded in TIFF mode with a print mark, only the uncompressed image is printed, and the JPEG image recorded at the same time is not printed.
- In E-mail mode, a print mark is marked on the normal size image that is recorded at the same time.

Dividing a moving image file (DIVIDE)

Mode dial: ▶

You can divide moving images recorded in MPEG MOVIE mode. This is convenient when there is not enough space on a “Memory Stick” or when attaching moving images to e-mails.



1 Set the mode dial to ▶ and display the moving image you want to divide.

2 Press MENU.
The menu appears.

3 Select [DIVIDE] with ◀/▶, then press ●, select [OK] with ▲/▼, then press ●.

4 Play the moving image.
If you press ● at this time, ◀II, II▶ (frame forward, frame reverse), [CANCEL] and [EXIT] appear on the screen. If you select [◀II,II▶], you can finely adjust the divide location using ◀/▶.
If you select [CANCEL], moving image playback restarts and you can reselect the divide location.

5 When you have decided the divide point, select [OK] then press ●.

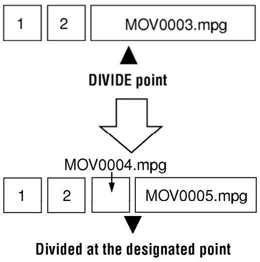
6 [OK], [CANCEL] and [EXIT] appear on the screen. Select [OK], then press ●.
The moving image file is divided.

You cannot divide the following types of files:

- Clip Motion files
- Still image files
- Moving image files that are too short to divide

The file number changes as follows when you divide a file.

<eg.> If you divide the MOV0003.mpg file, the divided file numbers become MOV0004.mpg and MOV0005.mpg, and MOV0003.mpg is skipped. The divided files are saved as the latest files.



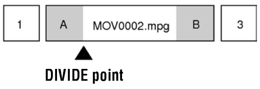
To cancel file division

Press [EXIT]. The image playback screen appears.

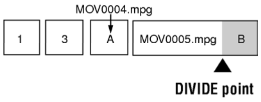
To delete unwanted portions

① Display the portion of the moving image you want to delete and press MENU.
② Select [DELETE] with ◀/▶, then press ●.
③ Select [OK] with ▲/▼, then press ●.

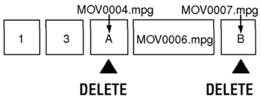
Step 1: Divide the unwanted scene A.



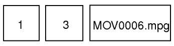
Step 2: Divide the unwanted scene B.



Step 3: Delete the unwanted scenes A and B.



Step 4: Only the desired scene remains.



Notes
- You cannot divide Clip Motion files.
- You cannot recombine divided files.
- The original undivided file is not saved.

Changing the setup settings (SETUP)

Set the mode dial to SET UP. The setup screen appears. You can set up the following items with the control button.

CAMERA

Item	Setting	Description
SCENE SELECTION	■ TWILIGHT LANDSCAPE PORTRAIT	Selects the SCENE SELECTION mode that is assigned to the SCN position (page 51).
MOVING IMAGE	■ MPEG MOVIE	Records the MPEG movie (pages 26, 56).
	CLIP MOTION	Records the Clip Motion.
DATE/TIME	DAY & TIME DATE ■ OFF	Sets whether to insert the date and time into the image (page 61).
DIGITAL ZOOM	■ ON	Uses digital zoom (page 22).
	OFF	Does not use digital zoom.
RED EYE REDUCTION	ON ■ OFF	Reduces the red-eye phenomenon (page 24).
AF ILLUMINATOR	■ ON OFF	Uses when it is hard to focus on the subject under dark situations (page 25).

SETUP 1

Item	Setting	Description
FORMAT	OK	Formats a "Memory Stick". Note that formatting erases all the information recorded on a "Memory Stick", including even erasure protected images (page 91).
	CANCEL	Cancels formatting of a "Memory Stick".
FILE NUMBER	■ SERIES	Assigns numbers to files in sequence even if the "Memory Stick" is changed.
	RESET	Resets the file numbering each time the "Memory Stick" is changed.

Item	Setting	Description
CONVERSION LENS	ON	Set to "ON" when using the VCL-MHG07 conversion lens (not supplied). At this time, the zoom function does not work and you cannot turn off the LCD screen. Also, note that the VAD-S70 adaptor ring needed to mount the conversion lens to your camera is not sold in some countries and regions.
	■ OFF	
言語/ LANGUAGE	■ ENGLISH	Displays the menu items in English.
	日本語/JPN	Displays the menu items in Japanese.
CLOCK SET	OK CANCEL	Sets the date and time (Perform the procedure from step ❸ on page 15).

SETUP 2

Item	Setting	Description
LCD BRIGHTNESS	BRIGHT ■ NORMAL DARK	Selects the LCD brightness. This has no effect on the recorded images.
LCD BACKLIGHT	BRIGHT ■ NORMAL	Selects the brightness of the LCD backlight. Lets you set the brightness of the LCD backlight to [BRIGHT] or [NORMAL]. Selecting [BRIGHT] makes the screen bright and easy to see when using the camera outdoors or in other bright locations, but also uses up the battery charge faster.
BEEP	SHUTTER	Turns on the shutter sound only. (The shutter sound is heard when you press the shutter button.)
	■ ON	Turns on the beep/shutter sound (when you press the control button/shutter button).
	OFF	Turns off the beep/shutter sound.
VIDEO OUT	NTSC	Sets the video output signal to NTSC mode (e.g., Japan, the USA) (page 82).
	PAL	Sets the video output signal to PAL mode (e.g., Europe) (page 82).
USB CONNECT	PTP ■ NORMAL	Switches the USB mode (page 31).

Item	Setting	Description
DEMO	■ ON/STBY OFF	Displayed only when you use the AC power adaptor. [DEMO] is set to [STBY] at the factory and the demonstration starts about 10 minutes after you have set the mode dial to 📷, S, A, or M. To cancel the demonstration, turn off the power. The demonstration will not start if the MOVING IMAGE setting is CLIP MOTION.

Notes on [DATE/TIME]

- The date and time do not appear on the LCD screen during shooting. These appear during playback.
- The date and time are not superimposed onto moving images and Clip Motion images.

Precautions

On cleaning

Cleaning the LCD screen

Wipe the screen surface with a cleaning cloth (not supplied) or a LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzine as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations

Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

Note on operating temperature

Your camera is designed for use between the temperatures of 0°C and 40°C (32°F and 104°F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:

- The camera is brought from a cold location such as a ski slope into a warmly heated room.
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation

When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs

Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On AC power adaptor

- Unplug the unit from the wall outlet (mains) when you are not using the unit for a long time.
- To disconnect the power cord (mains lead), pull it out by the plug. Never pull the power cord (mains lead) itself.
- Do not operate the unit with a damaged cord (mains lead) or if the unit has been dropped or damaged.
- Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM reception and video operation are disturbed.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - — Extremely hot or cold
  - — Dusty or dirty
  - — Very humid
  - — Vibrating

On battery pack

- Use only the specified charger with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Install the battery pack to the camera securely.
- Charging while some capacity remains does not affect the original battery capacity.

If any problem occurs, unplug your camera and contact your nearest Sony dealer.

On internal rechargeable button battery

This camera has an internal rechargeable button battery for maintaining the date and time and other settings regardless of whether the power is on or off. This rechargeable button battery is constantly charged as long as you are using the camera. However, if you use the camera for only short periods it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable button battery before using the camera. However, even if this rechargeable button battery is not charged, you can still use the camera as long as you do not record the date and time.

Charging method

Connect the camera to a wall outlet (mains) with the AC power adaptor, or install a charged battery pack, and leave the camera for 24 hours or more with the POWER switch set to OFF.

On “Memory Sticks”

“Memory Stick” is a new compact, portable and versatile IC recording medium with a data capacity that exceeds a floppy disk. “Memory Stick” is specially designed for exchanging and sharing digital data among “Memory Stick” compatible products. Because it is removable, “Memory Stick” can also be used for external data storage.

There are two types of “Memory Sticks”: general “Memory Sticks” and “MagicGate Memory Sticks” that are equipped with the MagicGate* copyright protection technology.
You can use both types of “Memory Stick” with your camera. However, because your camera does not support the MagicGate standards, data recorded with your camera is not subject to MagicGate copyright protection.

* MagicGate is copyright protection technology that uses encryption technology.

Notes

- Do not remove the “Memory Stick” while reading or writing data.
- Data may be damaged if:
  - —you remove the “Memory Stick” or turn off your camera while reading or writing data.
  - —you use the “Memory Stick” in a location subject to the effects of static electricity or noise.
- Do not attach any other material than the supplied label on the labeling position.
- Attach the label so that it does not stick out from the proper attachment location.
- When you carry or store the “Memory Stick,” put it in its supplied case.
- Do not touch the terminals of a “Memory Stick” with your hand or a metal object.
- Do not strike, bend or drop the “Memory Stick.”
- Do not disassemble or modify the “Memory Stick.”
- Do not allow the “Memory Stick” to get wet.

“Memory Stick”, MEMORY STICK™, “MagicGate Memory Stick” and MG are trademarks of Sony Corporation.

“MagicGate” and MAGICGATE are trademarks of Sony Corporation.

About “InfoLITHIUM” battery pack

What is the “InfoLITHIUM” battery pack?

The “InfoLITHIUM” battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC power adaptor.
The “InfoLITHIUM” battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camera.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the POWER ON/OFF (CHG) lamp goes out, indicating that the battery pack is fully charged. If you charge the battery pack outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, disconnect the AC power adaptor from the DC IN jack on your camera or remove the battery pack.

Effective use of the battery pack

- Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to use the battery pack longer:
  - —Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start taking shots.
- Frequently using the LCD panel or frequently operating the zoom wears out the battery pack faster.
- Be certain to turn the POWER switch to off when not taking shots or playing back on your camera.
- We recommend having spare batteries handy for two or three times the expected shooting time, and make a trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.
- The ▭ mark indicating there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is 5 to 10 minutes.

How to store the battery pack

- Even if the battery pack is not used for a long time, store it in a dry, cool place after fully charging it once per year and then using the battery pack up on your camera. This is to maintain the battery pack’s functions.
- To use the battery pack up on your camera, leave the POWER switch to on in slide show playback mode until the power goes off.

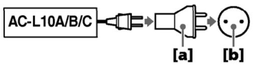
Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. Check the following list:

NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Columbia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system

Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system

Brazil

PAL-N system

Argentina, Paraguay, Uruguay

SECAM system

Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, press the reset button located on the bottom. (If you press the reset button, the date and time setting is cleared.) Should your camera still not operate properly, consult your Sony dealer or local authorized Sony service facility. **If code displays (C:☐☐:☐☐) appear on the LCD screen, the self-diagnosis display function is working (page 91).**

Symptom	Cause and/or Solution
Your camera does not work.	• You are not using an “InfoLITHIUM” battery pack. →Use an “InfoLITHIUM” battery pack (page 10). • The battery level is low (the ▭ indicator appears on the LCD screen). →Charge the battery pack (page 11). • The AC power adaptor is not connected securely. →Connect it firmly to the DC IN jack of your camera and a wall outlet (mains) (pages 11, 14). • The built-in microcomputer is not working properly. →Disconnect and then reconnect all power sources after one minute. Then turn the power on by sliding the POWER switch and check that the camera works properly. Press the reset button located on the bottom using a sharp-pointed object.
Your camera cannot record images.	• You cannot record images while charging the flash. • The mode dial is set to ▶ or SET UP. →Set it to 📷, S, A, M, SCN or 🎞 (pages 19, 26). • No “Memory Stick” has been inserted into your camera. →Insert a “Memory Stick” (page 17). • The write-protect tab on the “Memory Stick” is set to LOCK. →Set it to the recording position.
The LCD screen does not light when the power is turned on.	• The power was turned off with the LCD screen set to OFF the last time the camera was used. →The camera retains the settings from the last time it was used. If you turn the power off with the LCD screen set to OFF, the LCD is still set to OFF the next time you turn the power on.

Symptom	Cause and/or Solution
The picture is out of focus.	• Your camera is not in macro recording mode when you shoot a subject that is within 50 cm (19 3/4 inches) from the lens. → Set the macro recording mode (page 58). → Press the zoom button to set to the W side. • The LANDSCAPE mode of the SCENE SELECTION function is selected. → Cancel the function. • The focus preset is selected. → Cancel the function (page 58). • [CONVERSION LENS] is set to [ON]. → Set it to [OFF] (page 77).
The resizing function does not work.	• You cannot resize moving images, text images, Clip Motion and uncompressed images.
Images recorded in TEXT mode are blurry.	• Light is not striking the subject evenly. → Adjust so that the lighting strikes the subject evenly.
You cannot record images in TEXT mode.	• The mode dial is set to 🎞, S, A, M or SCN. → Set the mode dial to 📷.
You cannot display a print mark.	• You cannot display print marks on moving images, text images and Clip Motion images.
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. → Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. → Adjust the exposure (page 59). • The brightness of the LCD screen is too low. → Adjust the brightness of the LCD screen (page 77).

Symptom	Cause and/or Solution
The flash does not work.	• The flash is set to ⊘. → Set the flash to auto (no indicator) or ⚡ (page 24). • The camera is in one of the following SCENE SELECTION modes: TWILIGHT or LANDSCAPE. → Cancel the SCENE SELECTION function (page 51) or set the flash to ⚡. • The mode dial is set to ▶, SETUP or 🎞 (MPEG MOVIE). → Set it to 📷. • [MODE] (REC MODE) is set to [BURST2] in the menu settings. → Set it to other modes.
The date and time are recorded incorrectly.	• The date and time are not set correctly. → Set the correct date and time (page 15).
Vertical streaks appear when you are shooting a very bright subject.	• The smear phenomenon is happening. → This is not a malfunction.
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. → Charge the battery pack fully. • The battery pack is dead. → Replace the battery pack with a new one (page 10).
The battery remaining indicator is incorrect. Or sufficient battery remaining indicator is displayed but the power runs out soon.	• You have used the camera for a long time in an extremely hot or an extremely cold location. • The battery pack is dead. → Replace the battery pack with a new one (page 10). • The battery pack is discharged. → Install a charged battery pack (pages 10, 11). • A deviation has occurred in the remaining battery time. → Fully charge the battery pack (page 11).
Nothing appears in the display window or the indicators flash during charging.	• The AC power adaptor is disconnected. → Firmly connect the power cord to the wall outlet (page 14). • The battery pack is not installed correctly. → Install the battery pack correctly (page 10). • Charging is completed.

Symptom	Cause and/or Solution
You cannot charge the battery.	• The camera is turned on. → Turn the camera off (page 11).
The POWER ON/OFF (CHG) indicator flashes.	• The battery pack is not installed correctly. → Install the battery pack correctly (page 10). • The battery pack has malfunctioned. → Contact your Sony dealer or local authorized Sony service facility.
The zoom does not work.	• [CONVERSION LENS] in the setup setting is set to [ON]. → Set it to [OFF] (page 77). • The zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE].
Digital zoom does not function.	• The digital zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE], or the LCD screen is OFF. • [DIGITAL ZOOM] is set to [OFF]. → Set [DIGITAL ZOOM] to [ON] in the menu settings.
Your camera cannot play back images.	• The mode dial is set to 📷, 🎞, M, A, S, SCN or SET UP. → Set it to ▶ (pages 28, 29).
The image and sound are interfered by noise when you play back an image on a personal computer.	• You are playing back the file directly from the “Memory Stick.” → Copy the file to the hard disk of the personal computer and then play back the file from the hard disk (page 36).
The image cannot be played back on a personal computer.	→ Consult the personal computer or software manufacturer.
Your camera cannot delete an image.	• The image is protected. → Cancel the protection (page 68).
The power turns off suddenly.	• If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery (page 20). → Turn on the camera. • The battery is discharged. → Replace it with a charged battery.

Symptom	Cause and/or Solution
The image does not appear on the TV screen.	• The video output signal setting of your camera is incorrect. → Change the setting (page 77).
A file error occurs when you play back a file.	• The image size is larger than 2048×1536. → Use an image size of 2048×1536 or smaller.
The picture is monochrome (black and white).	• The camera is set to TEXT mode. → Cancel TEXT mode (page 55). • P. EFFECT is set to B&W mode. → Cancel B&W mode (page 61).
The lens does not retract even when the power is turned off.	• The battery is discharged. → Replace it with a fully charged battery or use the AC power adaptor.
Your personal computer does not recognize your camera.	• The battery level is low. → Use the AC power adaptor (page 14). • The camera is turned off. → Turn on the camera. • The USB cable is not connected firmly. → Disconnect the USB cable, and connect it again firmly. Make sure that “USB MODE” is displayed on the LCD screen (pages 33, 35). • The USB connectors on your personal computer are connected to other equipment besides the keyboard, the mouse, and your camera. → Disconnect the USB cables except for the ones connected to the keyboard, the mouse, and your camera. • The USB driver is not installed. → Install the USB driver (page 33). • [USB CONNECT] is set to [PTP] in the setup settings. → Set it to [NORMAL] (page 77). • Since the camera is connected to a computer with the USB cable before installing the USB driver, the drive is not recognized by the computer. → Delete the drive which is not recognized, then install the USB driver. For details, see the procedure on page 88.
No function works though the power is on.	→ Remove the battery pack, then install it again after about one minute. If the function still do not work, press the reset button located on the bottom using a sharp-pointed object. (If you press the reset button, the date and time setting is cleared.)

Reinstall the USB driver when using Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional

Perform all steps without skipping.

1 Turn on your computer and allow Windows to load.

2 Connect the USB jack on the camera and the computer with the supplied USB cable.

3 Insert a “Memory Stick”.

4 Connect the AC power adaptor to your camera and then to a wall outlet (mains), and turn on the power of your camera.

5 Open “Device Manager” on Windows.

For Windows 98, Windows 98SE and Windows Me users:

① Open [Control Panel] from [My Computer], then double-click [System].

② “System properties” is displayed. Click the [Device Manager] tab located at the top.

③ Click [Sony DSC] in [Other devices], then click the [Delete (E)] button located at the lower-right corner.

For Windows 2000 Professional users:

* Log in with the permission of administrator.

① Open [Control Panel] from [My Computer], then double-click [System].

② “System properties” is displayed. Click the [Hardware] tab located at the top, then click the [Device Manager (D)] button.

③ Click [View] in [Device Manager], then click [Devices by type (E)].

④ Right-click [Sony DSC] in [Other devices], then click [Delete (E)].

6 After the message appears to verify that you delete the device, click “OK.”

7 Turn off the camera, disconnect the USB cable, and restart the computer.

8 Install the USB driver in the supplied CD-ROM to the computer following the procedure on page 33.

Warning and notice messages

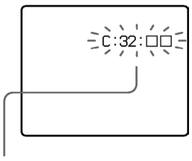
Various messages appear on the LCD screen. Check the corresponding descriptions in the following list.

Message	Meaning
NO MEMORY STICK	No “Memory Stick” has been inserted.
SYSTEM ERROR	Turn the power off and on again.
MEMORY STICK ERROR	• The inserted “Memory Stick” cannot be used with your camera, or is damaged. • The “Memory Stick” is not inserted correctly.
FORMAT ERROR	Failed to format the “Memory Stick.”
MEMORY STICK LOCKED	The write-protect tab on the “Memory Stick” is set to the LOCK position.
NO MEMORY SPACE	The capacity of the “Memory Stick” is full, and you cannot record or copy images.
NO FILE	No image has been recorded on the “Memory Stick.”
FILE ERROR	An error occurred while playing back the image.
FILE PROTECT	The image is protected against erasure.
for “InfoLITHIUM” battery only	The battery is not the “InfoLITHIUM” type.
NOT ENOUGH MEMORY	The images you want to copy are too big to copy with your camera.
COPY ERROR	Copying was not performed correctly, or the “Memory Stick” was removed during copying.
DIRECTORY ERROR	A directory with the same name already exists.
IMAGE SIZE OVER	You are playing back an image of a size that cannot be played back with your camera.
INVALID OPERATION	You are playing back a file that was created on equipment other than your camera.

Message	Meaning
▭	The battery level is low or zero. Depending on the conditions of use or the type of battery pack, the indicator may flash even though there is still 5 to 10 minutes of remaining battery time left.
LENS CAP ATTACHED	The lens cap is still attached to the lens.
CANNOT DIVIDE	• The file is not long enough to be divided. • The file is not a moving image.
✋	The amount of light is not sufficient or the shutter speed is too slow. (Mount the camera on a tripod or otherwise secure the camera in place.)
TURN THE POWER OFF AND ON AGAIN	A malfunction occurs on the lens.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four digits of numbers. If this occurs, check the following code chart. The code informs you of the camera’s current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C:□□:□□
  You can reverse the camera malfunction yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony service facility.

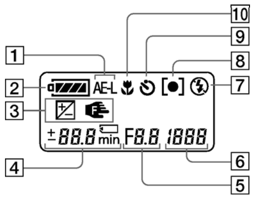
First three digits	Cause and/or Corrective Action
C:32:□□	• There is trouble with your camera’s hardware or zooming function. → Turn the power off and on again.
C:13:□□	• An unformatted “Memory Stick” is inserted. → Format the “Memory Stick” (page 76). • The inserted “Memory Stick” cannot be used with your camera, or is damaged. → Insert a new “Memory Stick” (page 17).
E:61:□□ E:91:□□	• A camera malfunction that you cannot reverse has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit service code. (example: E:61:10)

If you are unable to solve the problem even after trying the corrective actions a few times and when the camera is not reset even if you press the reset button located on the bottom, contact your Sony dealer or local authorized Sony service facility.

When a self-diagnosis display appears

The error display appears on the display window (page 93).

Display window indicators


1
2
3
4
5
6
7
8
9
10
AE-L
±88.8 min F8.8 1888

1 **AE lock indicator**

2 **Battery remaining indicator**

3 **EV indicator/Focus lock indicator**

4 **Remaining number of recordable images indicator/EV level indicator/Focus distance indicator/Battery usable time indicator (displayed only during charging)**

5 **Aperture value indicator**

6 **Shutter speed indicator**
Error display
Err: Some kind of misoperation has occurred. Check the self-diagnosis display on the LCD screen (page 91) and take the appropriate corrective action.
lEnS: A problem has occurred with lens drive. Turn the camera on and off several times, and if the problem persists, contact your Sony dealer or authorized Sony service facility.

7 **Flash mode indicator**

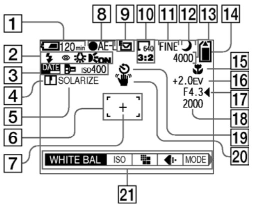
8 **Spot light-metering indicator**

9 **Self-timer indicator**

10 **Macro mode indicator**

LCD screen indicators

The indicators during recording still images


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
120min
AE-L
FINE
4000
3:2
ISO400
SOLARIZE
+2.0EV
F4.3
2000
WHITE BAL
ISO
MODE

1 **Battery remaining indicator**

2 **Flash mode/red eye reduction/ white balance/AF illuminator indicator**

3 **Date/time/conversion lens/ISO number indicator**

4 **Sharpness indicator**

5 **Picture effect indicator**

6 **AF frame**

7 **Spot light-metering cross hair**

8 **AE/AF lock indicator**

9 **Recording mode indicator**

10 **Image size indicator**

11 **Image quality indicator**

12 **Mode dial indicator**

13 **Remaining number of recordable images indicator/ Self-diagnosis function indicator**

14 **Remaining memory capacity indicator**

15 **Macro ✿/focus mode ☞ indicator**

16 **EV level indicator**

17 **Aperture value indicator**

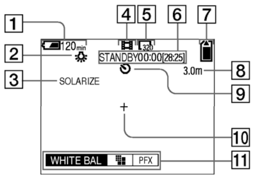
18 **Shutter speed indicator**

19 **Self-timer indicator**

20 **Light amount warning indicator**

21 **Menu and guide menu**
Pressing MENU switches the menu on/off.

The indicators during recording moving images


1
2
3
4
5
6
7
8
9
10
11
120min
320
STANDBY00:00[28:25]
3.0m
SOLARIZE
WHITE BAL
PFX

1 **Battery remaining indicator**

2 **White balance indicator**

3 **Picture effect indicator**

4 **Recording mode indicator**

5 **Image size indicator**

6 **Recording time (maximum recordable time) indicator/ Self-diagnosis function indicator**

7 **Remaining memory capacity indicator**

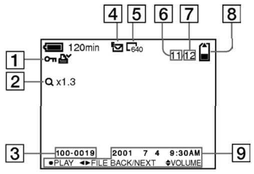
8 **Macro ✿/focus mode ☞ indicator**

9 **Self-timer indicator**

10 **Spot light-metering cross hair**

11 **Menu and guide menu**
Pressing MENU switches the menu on/off.

When playing back still images


1
2
3
4
5
6
7
8
9
120min
640
11/12
x1.3
100-0019
2001 7 4 9:30AM
●PLAY ◄►FILE BACK/NEXT ♦VOLUME

1 **Protect/print mark indicator**

2 **Zoom scaling indicator**

3 **File name**

4 **Recording mode indicator**

5 **Image size indicator**

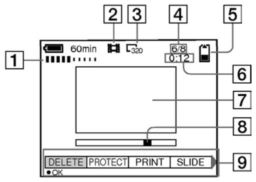
6 **Image number**

7 **Number of stored images in "Memory Stick"**

8 **Remaining memory capacity indicator**

9 **Recording date of the playback image/menu and guide menu**

When playing back moving images


1
2
3
4
5
6
7
8
9
60min
320
6/8
0:12
DELETE
PROTECT
PRINT
SLIDE
●OK

1 **VOL. (Volume) indicator**

2 **Recording mode indicator**

3 **Image size indicator**

4 **Image number/number of stored images in "Memory Stick"**

5 **Remaining memory capacity indicator**

6 **Counter**

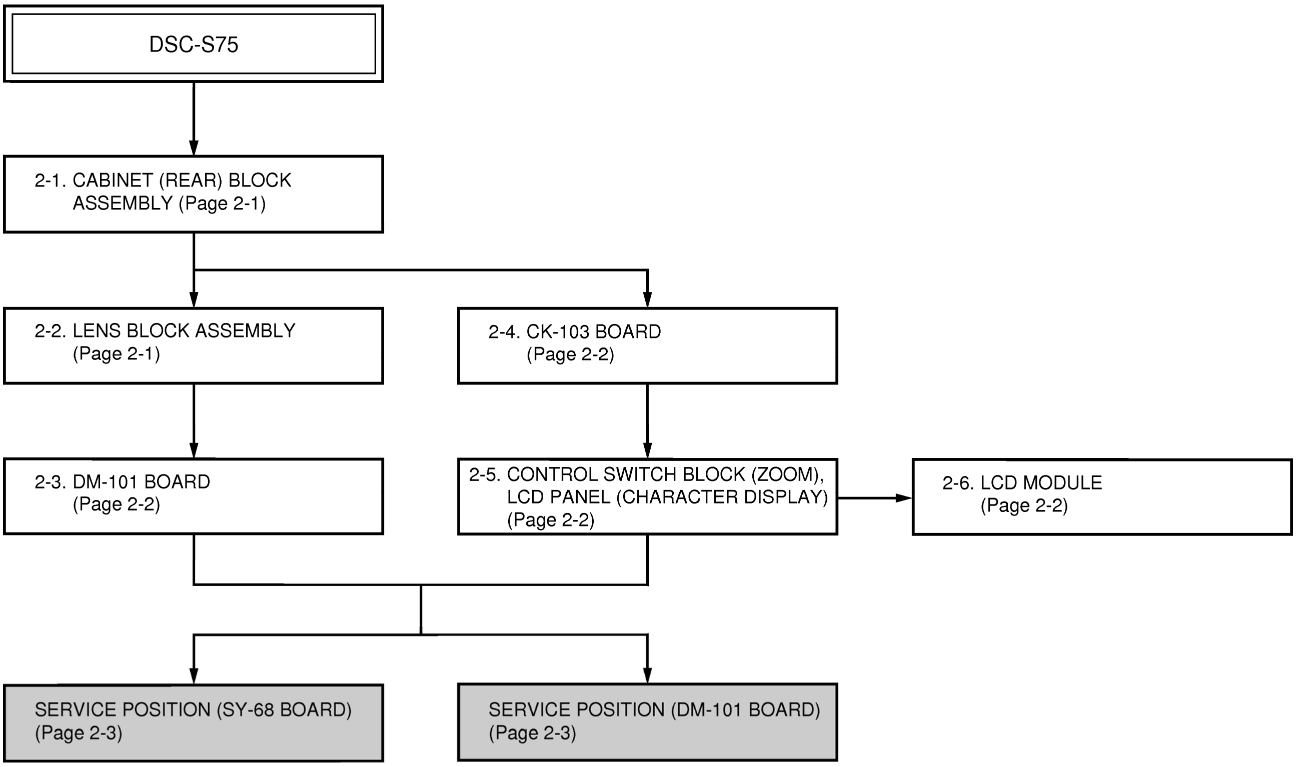
7 **Playback image**

8 **Play bar**

9 **Menu and guide menu (play/pause/fast-forward/ rewind)**

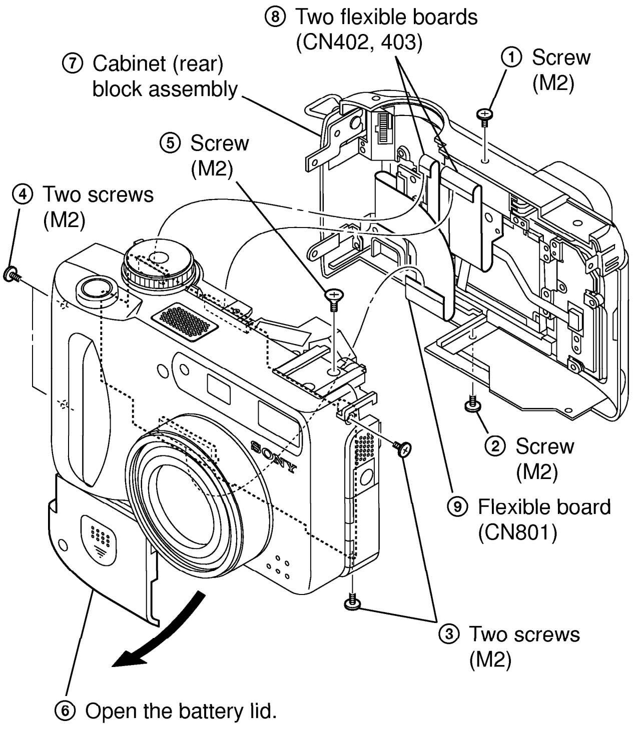
SECTION 2
DISASSEMBLY

- This set can be disassembled in the order shown below.

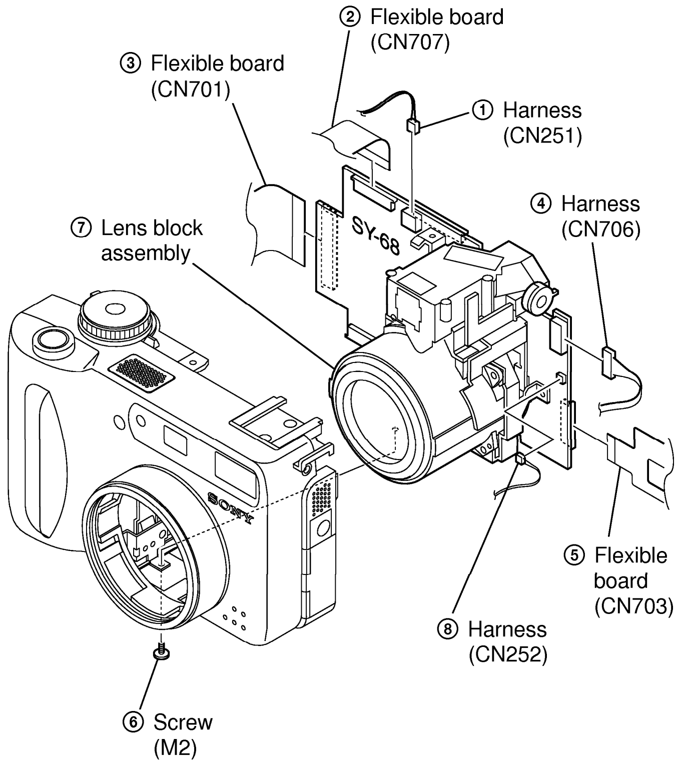

DSC-S75
2-1. CABINET (REAR) BLOCK ASSEMBLY (Page 2-1)
2-2. LENS BLOCK ASSEMBLY (Page 2-1)
2-4. CK-103 BOARD (Page 2-2)
2-3. DM-101 BOARD (Page 2-2)
2-5. CONTROL SWITCH BLOCK (ZOOM), LCD PANEL (CHARACTER DISPLAY) (Page 2-2)
2-6. LCD MODULE (Page 2-2)
SERVICE POSITION (SY-68 BOARD) (Page 2-3)
SERVICE POSITION (DM-101 BOARD) (Page 2-3)

Note: Follow the disassembly procedure in the numerical order given.

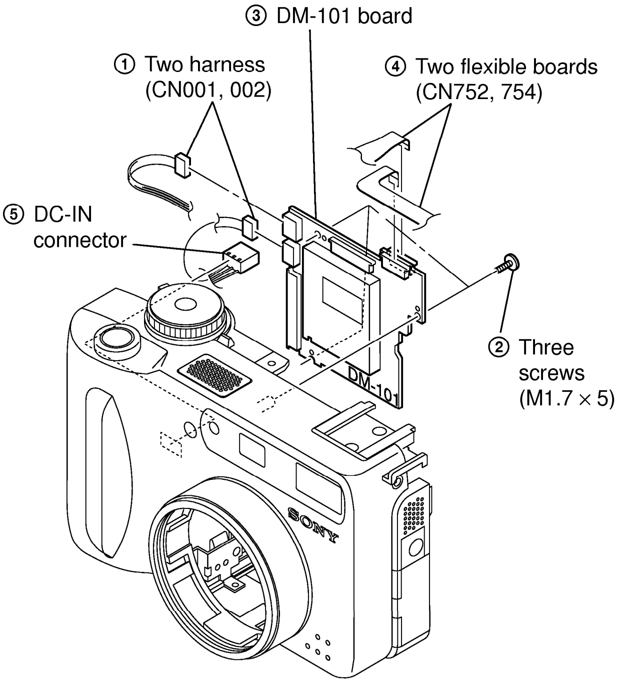
2-1. CABINET (REAR) BLOCK ASSEMBLY


⑧ Two flexible boards (CN402, 403)
⑦ Cabinet (rear) block assembly
① Screw (M2)
⑤ Screw (M2)
④ Two screws (M2)
② Screw (M2)
⑨ Flexible board (CN801)
③ Two screws (M2)
⑥ Open the battery lid.

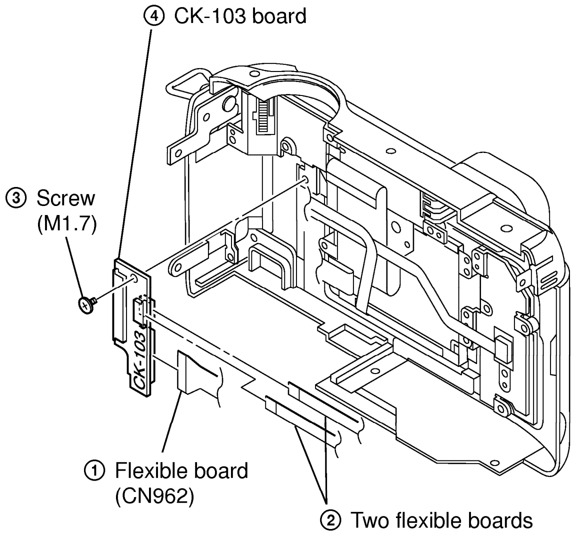
2-2. LENS BLOCK ASSEMBLY


② Flexible board (CN707)
③ Flexible board (CN701)
① Harness (CN251)
④ Harness (CN706)
⑦ Lens block assembly
SY-68
⑤ Flexible board (CN703)
⑧ Harness (CN252)
⑥ Screw (M2)

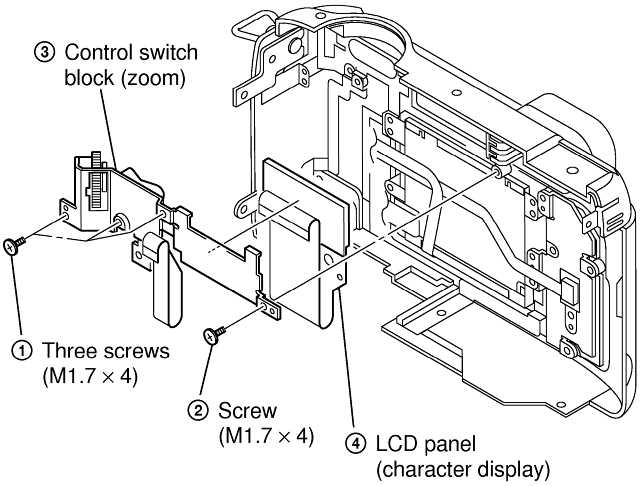
2-3. DM-101 BOARD


③ DM-101 board
① Two harness (CN001, 002)
④ Two flexible boards (CN752, 754)
⑤ DC-IN connector
② Three screws (M1.7 × 5)
DM-101
SONY

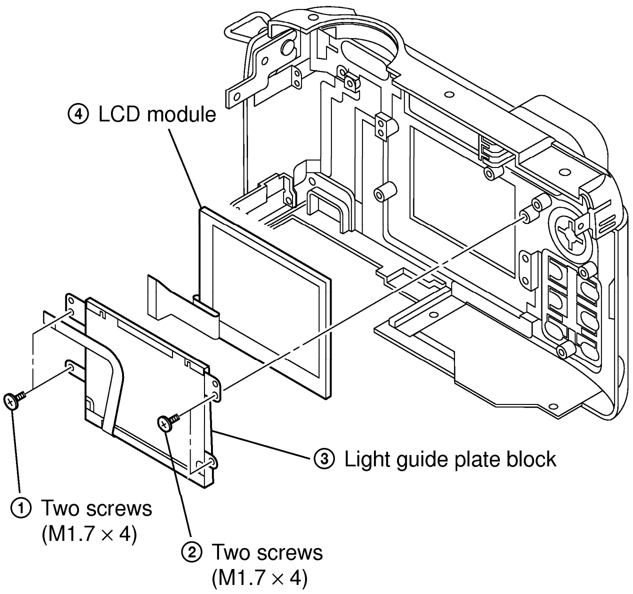
2-4. CK-103 BOARD


④ CK-103 board
③ Screw (M1.7)
CK-103
① Flexible board (CN962)
② Two flexible boards (CN961, 964)

2-5. CONTROL SWITCH BLOCK (ZOOM), LCD PANEL (CHARACTER DISPLAY)

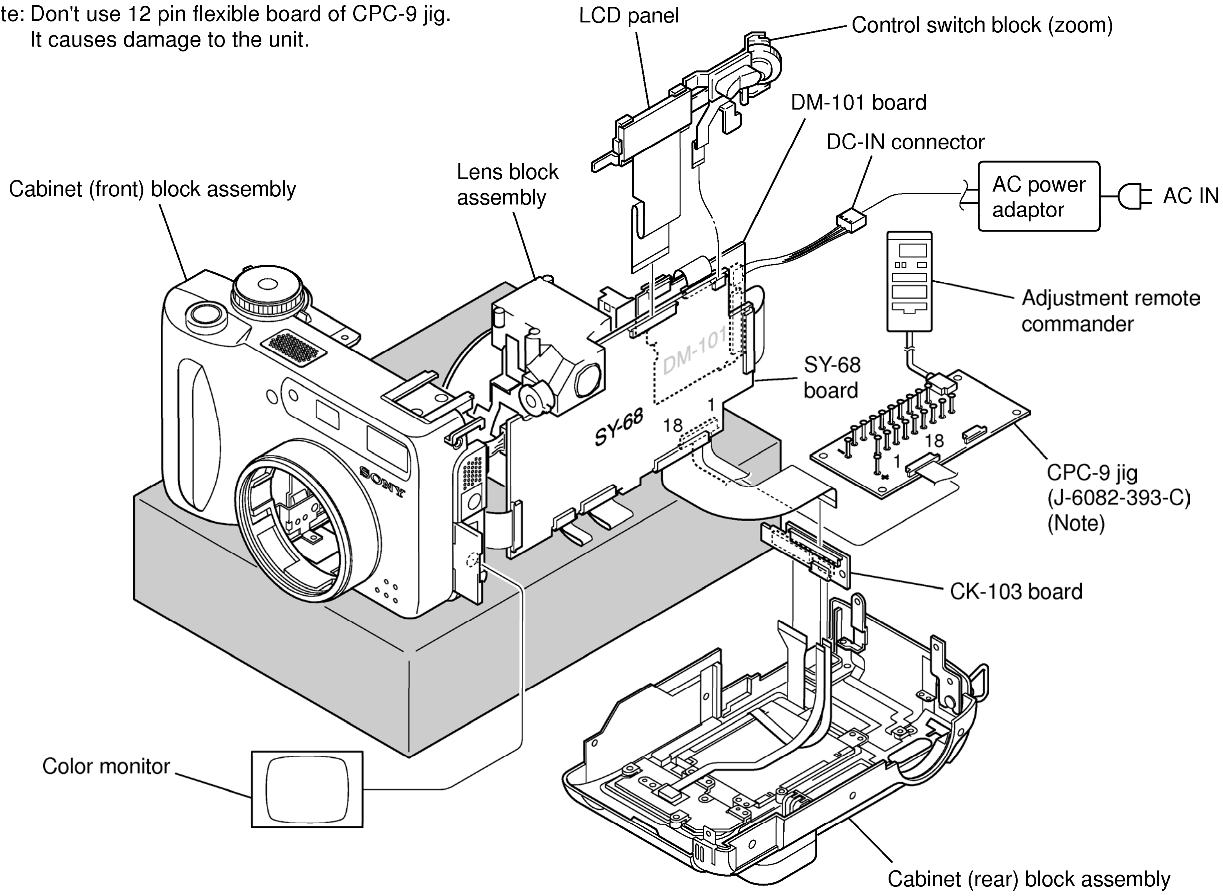

③ Control switch block (zoom)
① Three screws (M1.7 × 4)
② Screw (M1.7 × 4)
④ LCD panel (character display)

2-6. LCD MODULE


④ LCD module
③ Light guide plate block
① Two screws (M1.7 × 4)
② Two screws (M1.7 × 4)

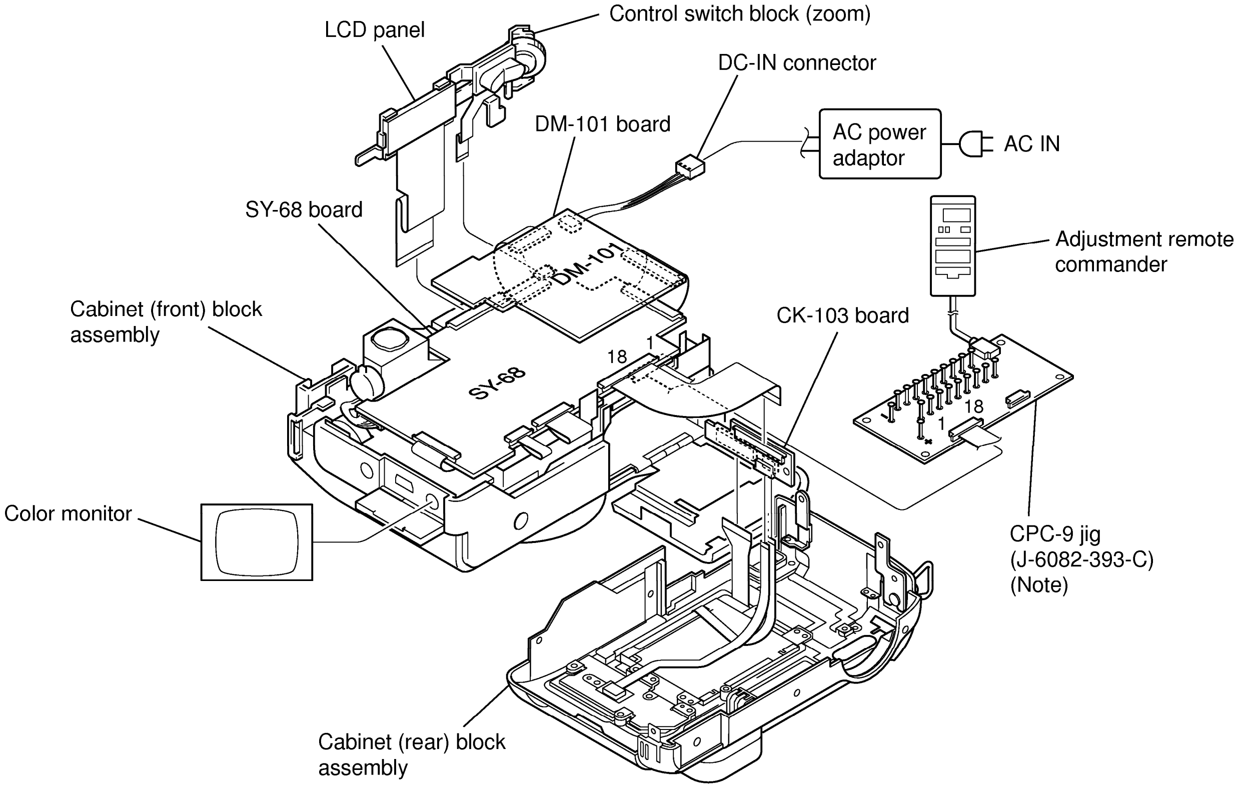
[SERVICE POSITION (SY-68 BOARD)]

Note: Don't use 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.

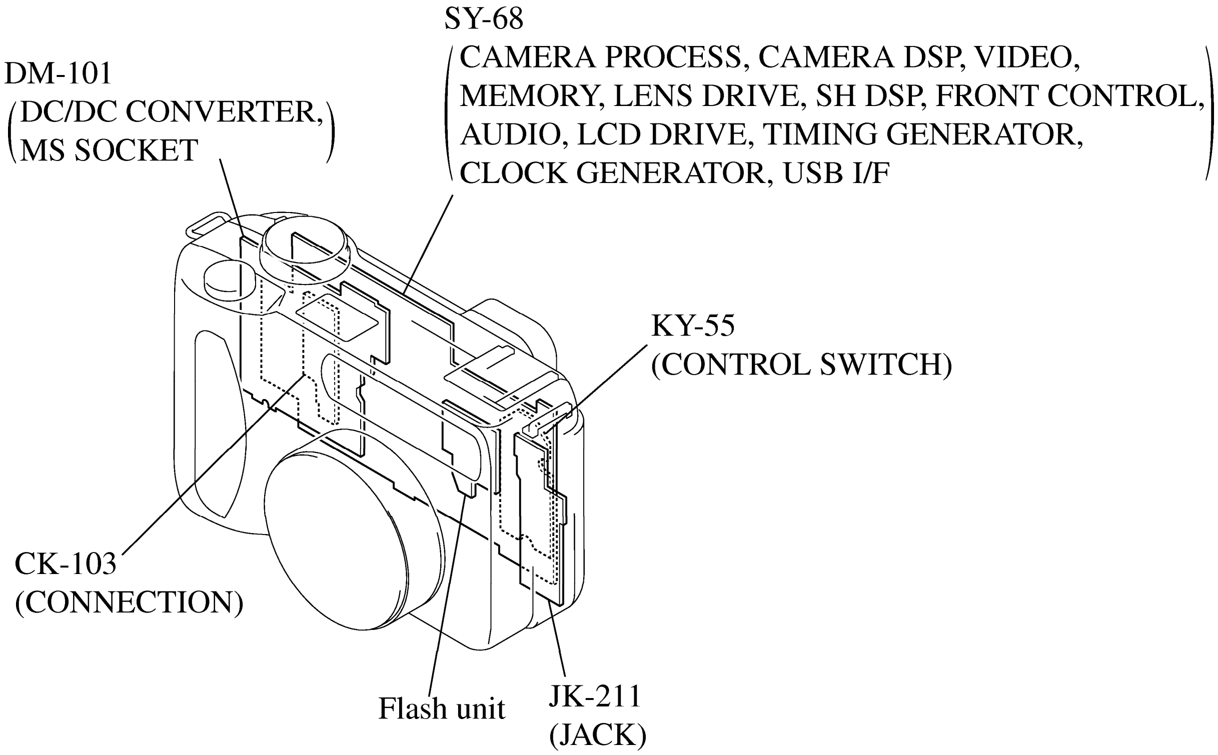

LCD panel
Control switch block (zoom)
DM-101 board
DC-IN connector
Cabinet (front) block assembly
Lens block assembly
AC power adaptor
AC IN
Adjustment remote commander
DM-101
SY-68 board
SY-68
1
18
18
1
CPC-9 jig (J-6082-393-C) (Note)
CK-103 board
Color monitor
Cabinet (rear) block assembly

[SERVICE POSITION (DM-101 BOARD)]

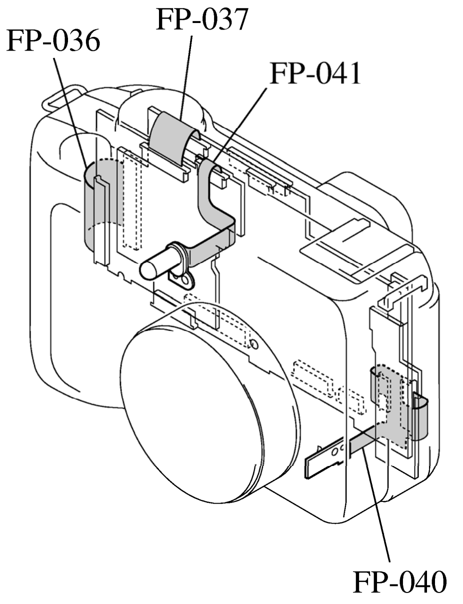
Note: Don't use 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.

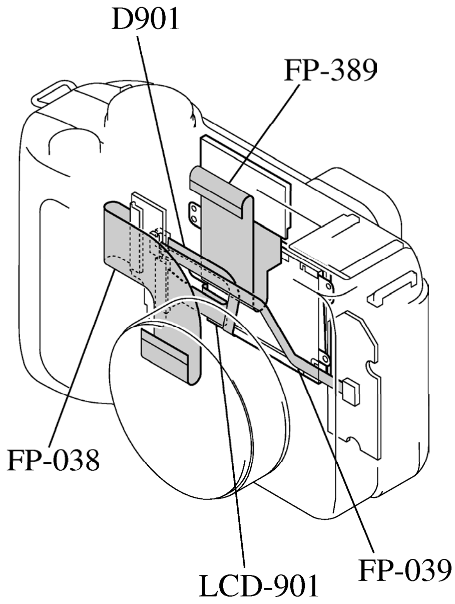

Control switch block (zoom)
LCD panel
DC-IN connector
DM-101 board
AC power adaptor
AC IN
SY-68 board
DM-101
Adjustment remote commander
Cabinet (front) block assembly
CK-103 board
SY-68
18
1
18
1
Color monitor
CPC-9 jig (J-6082-393-C) (Note)
Cabinet (rear) block assembly

2-7. CIRCUIT BOARDS LOCATION


SY-68
(CAMERA PROCESS, CAMERA DSP, VIDEO, MEMORY, LENS DRIVE, SH DSP, FRONT CONTROL, AUDIO, LCD DRIVE, TIMING GENERATOR, CLOCK GENERATOR, USB I/F)
DM-101
(DC/DC CONVERTER, MS SOCKET)
KY-55
(CONTROL SWITCH)
CK-103
(CONNECTION)
Flash unit
JK-211
(JACK)

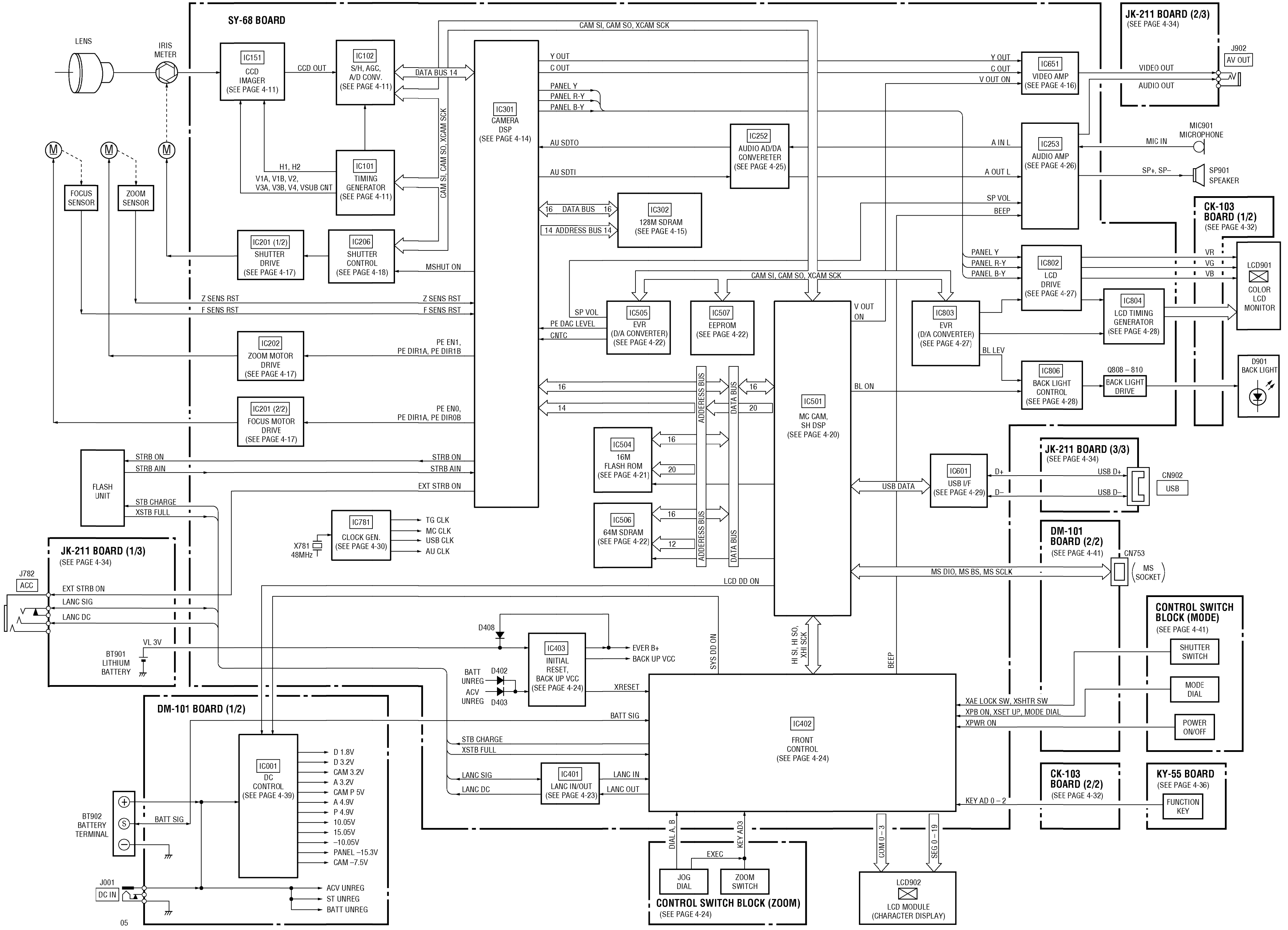
2-8. FLEXIBLE BOARDS LOCATION


FP-036
FP-037
FP-041
FP-040

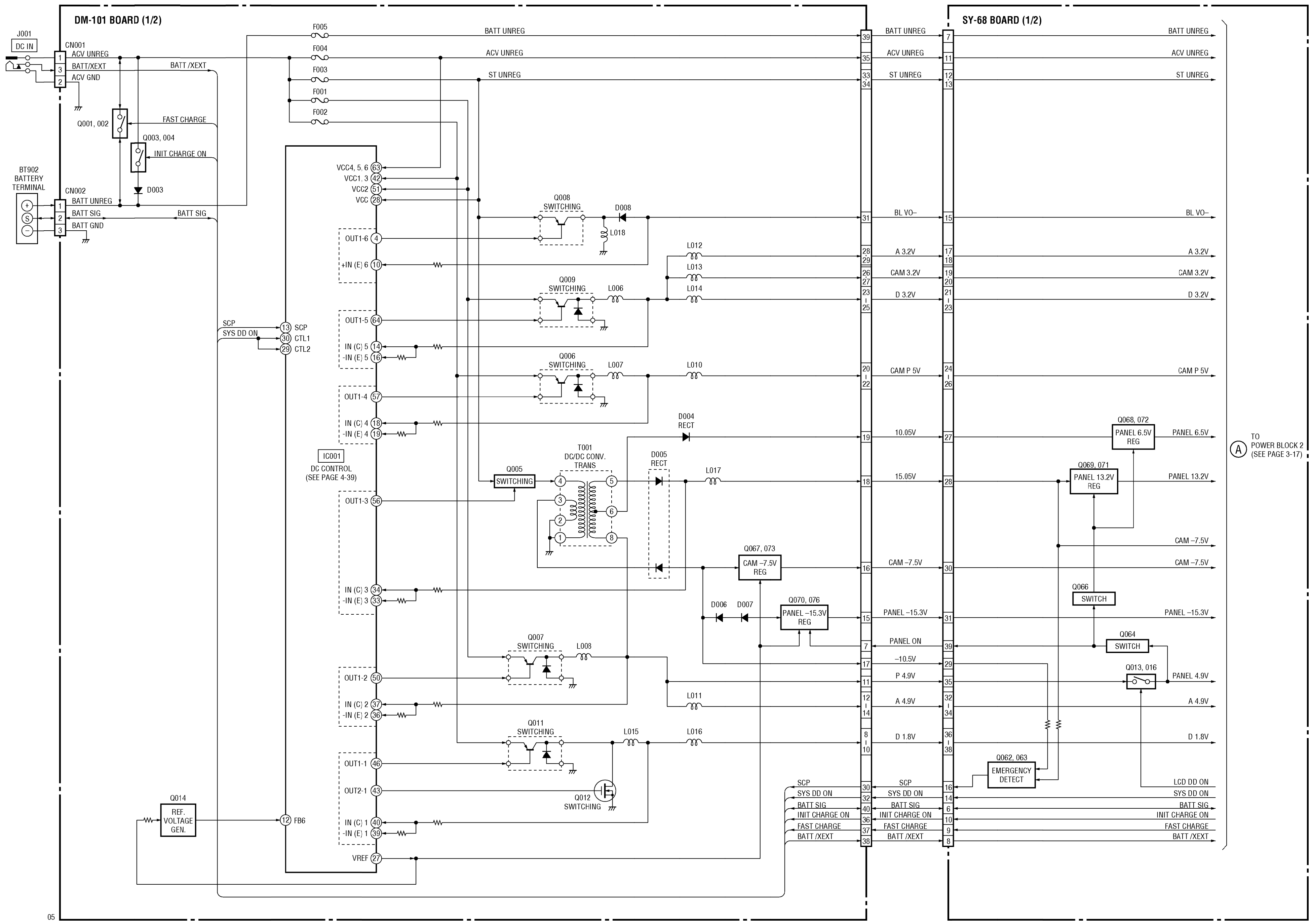

D901
FP-389
FP-038
LCD-901
FP-039

SECTION 3
BLOCK DIAGRAMS

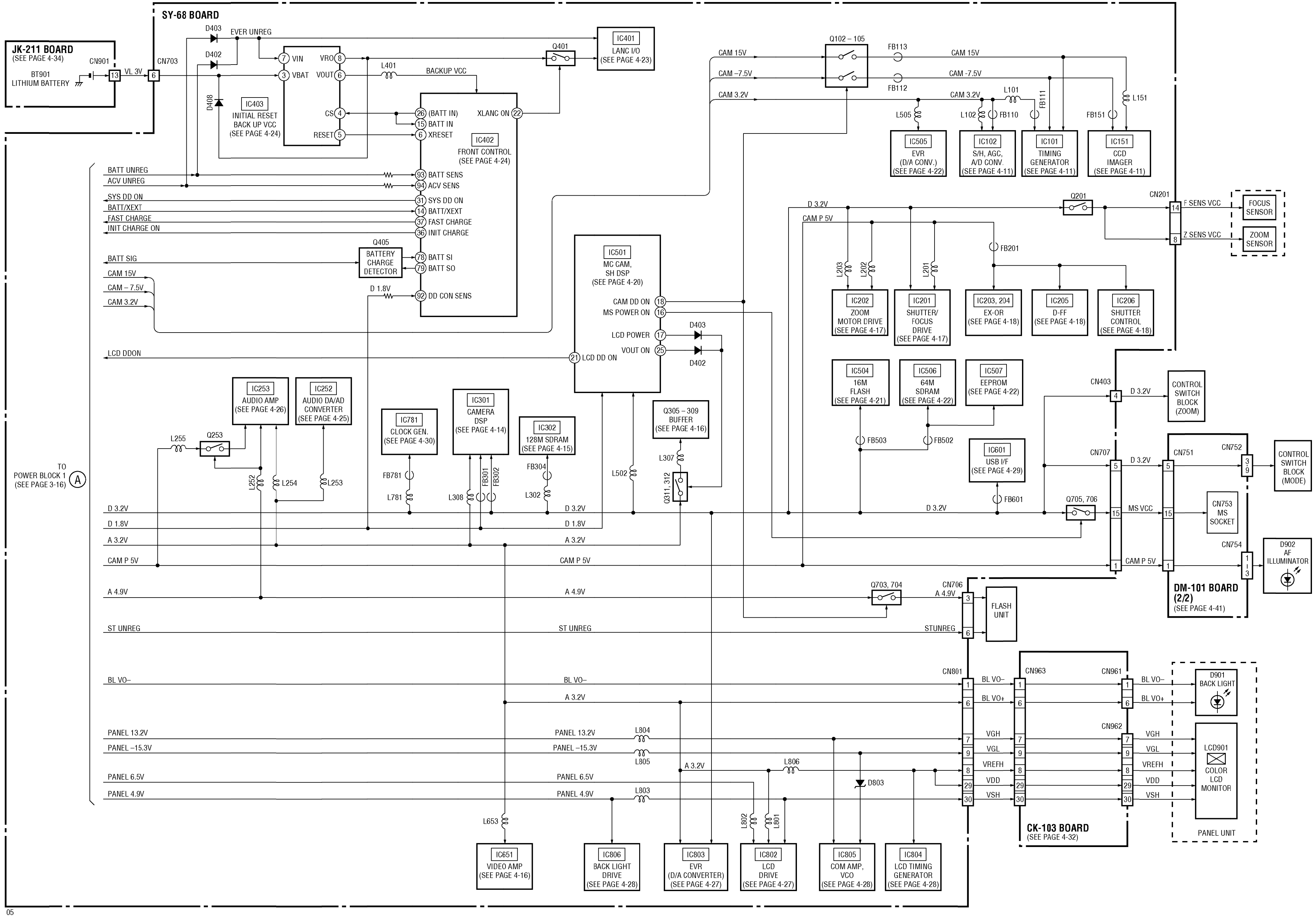
3-1. OVERALL BLOCK DIAGRAM


SY-68 BOARD
LENS
IRIS METER
IC151 CCD IMAGER (SEE PAGE 4-11)
CCD OUT
IC102 S/H, AGC, A/D CONV. (SEE PAGE 4-11)
DATA BUS 14
CAM SI, CAM SO, XCAM SCK
IC301 CAMERA DSP (SEE PAGE 4-14)
Y OUT
C OUT
PANEL Y
PANEL R-Y
PANEL B-Y
AU SDTO
AU SDTI
IC101 TIMING GENERATOR (SEE PAGE 4-11)
H1, H2
V1A, V1B, V2, V3A, V3B, V4, VSUB CNT
FOCUS SENSOR
ZOOM SENSOR
M
IC201 (1/2) SHUTTER DRIVE (SEE PAGE 4-17)
IC206 SHUTTER CONTROL (SEE PAGE 4-18)
MSHUT ON
Z SENS RST
F SENS RST
IC202 ZOOM MOTOR DRIVE (SEE PAGE 4-17)
PE EN1, PE DIR1A, PE DIR1B
IC201 (2/2) FOCUS MOTOR DRIVE (SEE PAGE 4-17)
PE EN0, PE DIR1A, PE DIR0B
FLASH UNIT
STRB ON
STRB AIN
EXT STRB ON
STB CHARGE
XSTB FULL
IC781 CLOCK GEN. (SEE PAGE 4-30)
X781 48MHz
TG CLK
MC CLK
USB CLK
AU CLK
16 DATA BUS 16
14 ADDRESS BUS 14
IC302 128M SDRAM (SEE PAGE 4-15)
IC252 AUDIO AD/DA CONVERETER (SEE PAGE 4-25)
SP VOL
PE DAC LEVEL
CNTC
IC505 EVR (D/A CONVERTER) (SEE PAGE 4-22)
IC507 EEPROM (SEE PAGE 4-22)
ADDERESS BUS
DATA BUS
16
14
20
IC504 16M FLASH ROM (SEE PAGE 4-21)
IC506 64M SDRAM (SEE PAGE 4-22)
12
IC501 MC CAM, SH DSP (SEE PAGE 4-20)
V OUT ON
BL ON
USB DATA
MS DIO, MS BS, MS SCLK
LCD DD ON
SYS DD ON
HI SI, HI SO, XHI SCK
BEEP
IC603 EVR (D/A CONVERTER) (SEE PAGE 4-27)
BL LEV
IC651 VIDEO AMP (SEE PAGE 4-16)
C OUT
V OUT ON
IC253 AUDIO AMP (SEE PAGE 4-26)
A IN L
A OUT L
SP VOL
MIC IN
SP+, SP–
MIC901 MICROPHONE
SP901 SPEAKER
JK-211 BOARD (2/3) (SEE PAGE 4-34)
J902 AV OUT
VIDEO OUT
AUDIO OUT
IC802 LCD DRIVE (SEE PAGE 4-27)
IC804 LCD TIMING GENERATOR (SEE PAGE 4-28)
CK-103 BOARD (1/2) (SEE PAGE 4-32)
VR
VG
VB
LCD901 COLOR LCD MONITOR
IC806 BACK LIGHT CONTROL (SEE PAGE 4-28)
Q808 – 810 BACK LIGHT DRIVE
D901 BACK LIGHT
IC601 USB I/F (SEE PAGE 4-29)
D+
D–
JK-211 BOARD (3/3) (SEE PAGE 4-34)
USB D+
USB D–
CN902 USB
DM-101 BOARD (2/2) (SEE PAGE 4-41)
CN753
MS SOCKET
JK-211 BOARD (1/3) (SEE PAGE 4-34)
J782 ACC
EXT STRB ON
LANC SIG
LANC DC
VL 3V
BT901 LITHIUM BATTERY
D408
IC403 INITIAL RESET, BACK UP VCC (SEE PAGE 4-24)
EVER B+
BACK UP VCC
BATT UNREG
ACV UNREG
D402
D403
XRESET
BATT SIG
IC402 FRONT CONTROL (SEE PAGE 4-24)
XAE LOCK SW, XSHTR SW
XPB ON, XSET UP, MODE DIAL
XPWR ON
KEY AD 0 – 2
CONTROL SWITCH BLOCK (MODE) (SEE PAGE 4-41)
SHUTTER SWITCH
MODE DIAL
POWER ON/OFF
CK-103 BOARD (2/2) (SEE PAGE 4-32)
KY-55 BOARD (SEE PAGE 4-36)
FUNCTION KEY
DM-101 BOARD (1/2)
IC001 DC CONTROL (SEE PAGE 4-39)
D 1.8V
D 3.2V
CAM 3.2V
A 3.2V
CAM P 5V
A 4.9V
P 4.9V
10.05V
15.05V
–10.05V
PANEL –15.3V
CAM –7.5V
BT902 BATTERY TERMINAL
BATT SIG
J001 DC IN
ACV UNREG
ST UNREG
BATT UNREG
STB CHARGE
XSTB FULL
LANC SIG
LANC DC
IC401 LANC IN/OUT (SEE PAGE 4-23)
LANC IN
LANC OUT
DIAL A, B
KEY AD3
EXEC
JOG DIAL
ZOOM SWITCH
CONTROL SWITCH BLOCK (ZOOM) (SEE PAGE 4-24)
COM 0 – 3
SEG 0 – 19
LCD902 LCD MODULE (CHARACTER DISPLAY)
05

3-8. POWER BLOCK DIAGRAM 1


DM-101 BOARD (1/2)
SY-68 BOARD (1/2)
J001
DC IN
CN001
ACV UNREG
BATT/XEXT
ACV GND
BATT /XEXT
F005
F004
F003
F001
F002
BATT UNREG
ACV UNREG
ST UNREG
Q001, 002
FAST CHARGE
Q003, 004
INIT CHARGE ON
D003
BT902
BATTERY
TERMINAL
CN002
BATT UNREG
BATT SIG
BATT GND
VCC4, 5, 6
VCC1, 3
VCC2
VCC
Q008
SWITCHING
D008
L018
OUT1-6
+IN (E) 6
L012
L013
Q009
SWITCHING
L006
L014
SCP
SYS DD ON
SCP
CTL1
CTL2
OUT1-5
IN (C) 5
-IN (E) 5
Q006
SWITCHING
L007
L010
OUT1-4
IN (C) 4
-IN (E) 4
D004
RECT
T001
DC/DC CONV.
TRANS
D005
RECT
IC001
DC CONTROL
(SEE PAGE 4-39)
Q005
SWITCHING
L017
OUT1-3
IN (C) 3
-IN (E) 3
Q067, 073
CAM –7.5V
REG
D006
D007
Q070, 076
PANEL –15.3V
REG
Q007
SWITCHING
L008
OUT1-2
IN (C) 2
-IN (E) 2
L011
Q011
SWITCHING
L015
L016
OUT1-1
OUT2-1
Q012
SWITCHING
Q014
REF.
VOLTAGE
GEN.
FB6
IN (C) 1
-IN (E) 1
VREF
BATT UNREG
ACV UNREG
ST UNREG
BL VO–
A 3.2V
CAM 3.2V
D 3.2V
CAM P 5V
10.05V
15.05V
CAM –7.5V
PANEL –15.3V
PANEL ON
–10.5V
P 4.9V
A 4.9V
D 1.8V
SCP
SYS DD ON
BATT SIG
INIT CHARGE ON
FAST CHARGE
BATT /XEXT
Q068, 072
PANEL 6.5V
REG
Q069, 071
PANEL 13.2V
REG
Q066
SWITCH
Q064
SWITCH
Q013, 016
Q062, 063
EMERGENCY
DETECT
PANEL 6.5V
PANEL 13.2V
CAM –7.5V
PANEL –15.3V
PANEL 4.9V
LCD DD ON
A
TO
POWER BLOCK 2
(SEE PAGE 3-17)
05

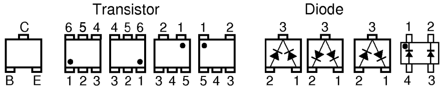
3-9. POWER BLOCK DIAGRAM 2


SY-68 BOARD
JK-211 BOARD
(SEE PAGE 4-34)
CN901
BT901
LITHIUM BATTERY
13
VL 3V
6
CN703
D403
EVER UNREG
D402
D408
IC403
INITIAL RESET
BACK UP VCC
(SEE PAGE 4-24)
7 VIN
3 VBAT
VRO 8
VOUT 6
CS 4
RESET 5
L401
BACKUP VCC
Q401
IC401
LANC I/O
(SEE PAGE 4-23)
26 (BATT IN)
15 BATT IN
6 XRESET
XLANC ON 22
IC402
FRONT CONTROL
(SEE PAGE 4-24)
BATT UNREG
ACV UNREG
SYS DD ON
BATT/XEXT
FAST CHARGE
INIT CHARGE ON
93 BATT SENS
94 ACV SENS
31 SYS DD ON
14 BATT/XEXT
37 FAST CHARGE
36 INIT CHARGE
Q405
BATTERY
CHARGE
DETECTOR
BATT SIG
78 BATT SI
79 BATT SO
CAM 15V
CAM – 7.5V
CAM 3.2V
D 1.8V
92 DD CON SENS
IC501
MC CAM,
SH DSP
(SEE PAGE 4-20)
CAM DD ON 18
MS POWER ON 16
LCD POWER 17
VOUT ON 25
21 LCD DD ON
D403
D402
LCD DDON
Q102 – 105
FB113
FB112
CAM 15V
CAM –7.5V
CAM 3.2V
L101
FB111
L151
L505
L102
FB110
FB151
IC505
EVR
(D/A CONV.)
(SEE PAGE 4-22)
IC102
S/H, AGC,
A/D CONV.
(SEE PAGE 4-11)
IC101
TIMING
GENERATOR
(SEE PAGE 4-11)
IC151
CCD
IMAGER
(SEE PAGE 4-11)
D 3.2V
CAM P 5V
Q201
CN201
F SENS VCC
Z SENS VCC
14
8
FOCUS
SENSOR
ZOOM
SENSOR
FB201
L203
L202
L201
IC202
ZOOM
MOTOR DRIVE
(SEE PAGE 4-17)
IC201
SHUTTER/
FOCUS
DRIVE
(SEE PAGE 4-17)
IC203, 204
EX-OR
(SEE PAGE 4-18)
IC205
D-FF
(SEE PAGE 4-18)
IC206
SHUTTER
CONTROL
(SEE PAGE 4-18)
IC504
16M
FLASH
(SEE PAGE 4-21)
IC506
64M
SDRAM
(SEE PAGE 4-22)
IC507
EEPROM
(SEE PAGE 4-22)
FB503
FB502
IC601
USB I/F
(SEE PAGE 4-29)
FB601
CN403
4
D 3.2V
CONTROL
SWITCH
BLOCK
(ZOOM)
CN707
D 3.2V
5
15
1
CN751
CN752
3
9
CONTROL
SWITCH
BLOCK
(MODE)
Q705, 706
MS VCC
CN753
MS
SOCKET
CN754
CAM P 5V
1
13
D902
AF
ILLUMINATOR
DM-101 BOARD
(2/2)
(SEE PAGE 4-41)
IC253
AUDIO AMP
(SEE PAGE 4-26)
IC252
AUDIO DA/AD
CONVERTER
(SEE PAGE 4-25)
L255
Q253
L252
L254
L253
IC781
CLOCK GEN.
(SEE PAGE 4-30)
FB781
L781
IC301
CAMERA
DSP
(SEE PAGE 4-14)
L308
FB301
FB302
IC302
128M SDRAM
(SEE PAGE 4-15)
FB304
L302
L502
Q305 – 309
BUFFER
(SEE PAGE 4-16)
L307
Q311, 312
TO
POWER BLOCK 1
(SEE PAGE 3-16)
A
D 3.2V
D 1.8V
A 3.2V
CAM P 5V
A 4.9V
ST UNREG
BL VO–
PANEL 13.2V
PANEL –15.3V
PANEL 6.5V
PANEL 4.9V
D 3.2V
D 1.8V
A 3.2V
CAM P 5V
A 4.9V
ST UNREG
BL VO–
A 3.2V
PANEL 13.2V
PANEL –15.3V
PANEL 6.5V
PANEL 4.9V
D 3.2V
Q703, 704
CN706
A 4.9V
STUNREG
3
6
FLASH
UNIT
CN801
BL VO–
BL VO+
VGH
VGL
VREFH
VDD
VSH
1
6
7
9
8
29
30
L804
L805
L806
L803
A 3.2V
D803
L653
L802
L801
CK-103 BOARD
(SEE PAGE 4-32)
CN963
CN961
CN962
BL VO–
BL VO+
VGH
VGL
VREFH
VDD
VSH
D901
BACK LIGHT
LCD901
COLOR
LCD
MONITOR
PANEL UNIT
IC651
VIDEO AMP
(SEE PAGE 4-16)
IC806
BACK LIGHT
DRIVE
(SEE PAGE 4-28)
IC803
EVR
(D/A CONVERTER)
(SEE PAGE 4-27)
IC802
LCD
DRIVE
(SEE PAGE 4-27)
IC805
COM AMP,
VCO
(SEE PAGE 4-28)
IC804
LCD TIMING
GENERATOR
(SEE PAGE 4-28)
05

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- LF : Uses unleaded solder.
- ▒ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.



(For schematic diagrams)
- All capacitors are in µF unless otherwise noted. pF : µµF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example C541 L452
22U 10UH
TA A 2520
Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- -▭- : non flammable resistor
- -∿- : fusible resistor
- ▭ : panel designation
- ━━ : B+ Line *
- ━ ━ ━ : B– Line *
- ⇨ : IN/OUT direction of (+,–) B LINE. *
- ▭ : adjustment for repair. *
- Circled numbers refer to waveforms. *

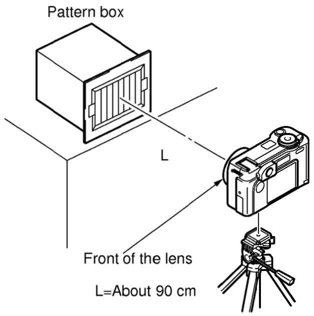
* Indicated by the color red.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

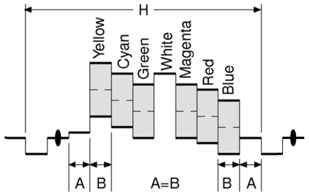


Fig. a (Video output terminal waveform)

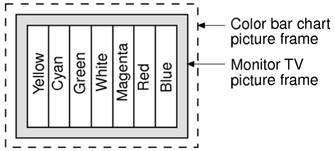
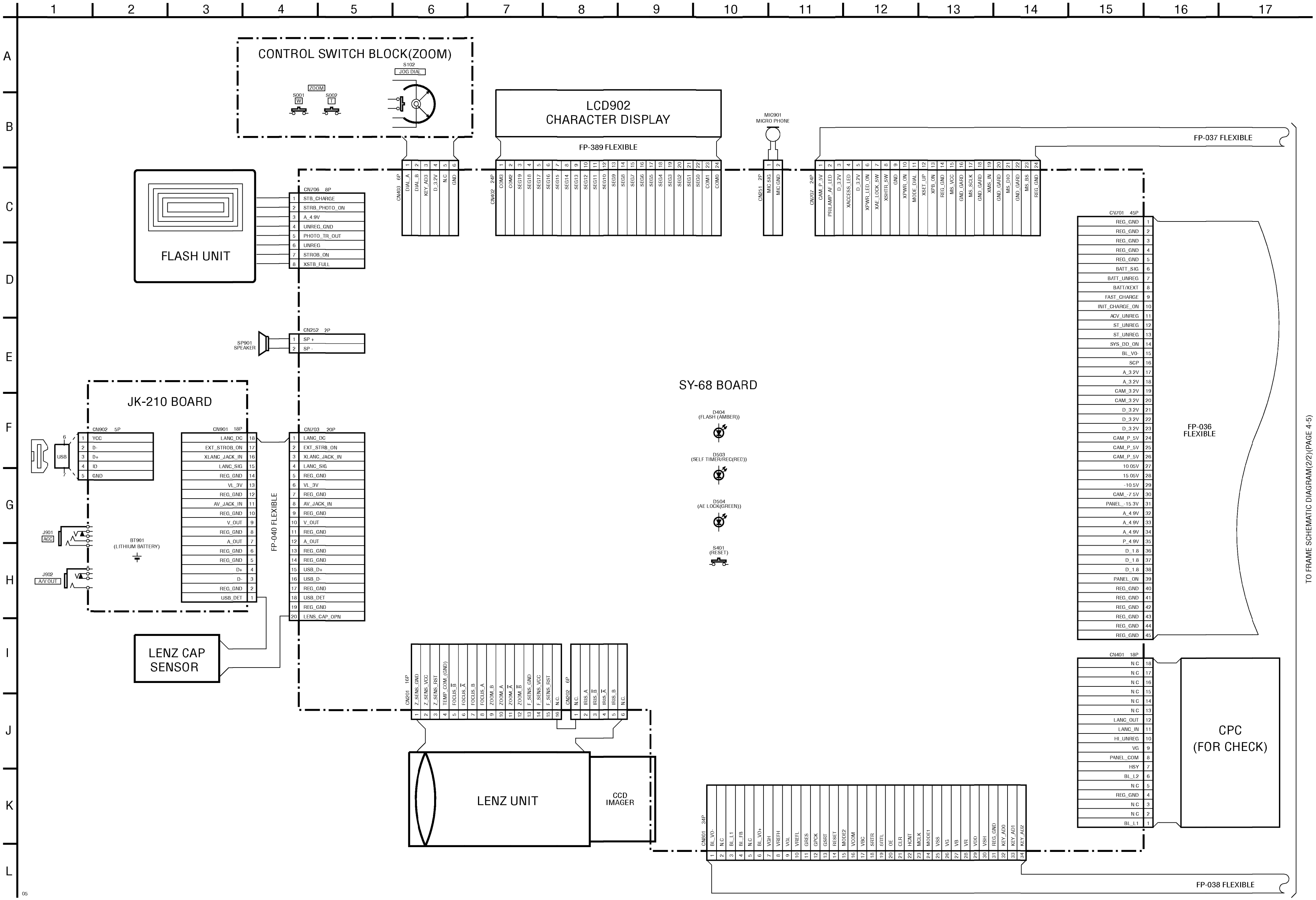


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

4-1. FRAME SCHEMATIC DIAGRAMS

FRAME SCHEMATIC DIAGRAM (1/2)


1
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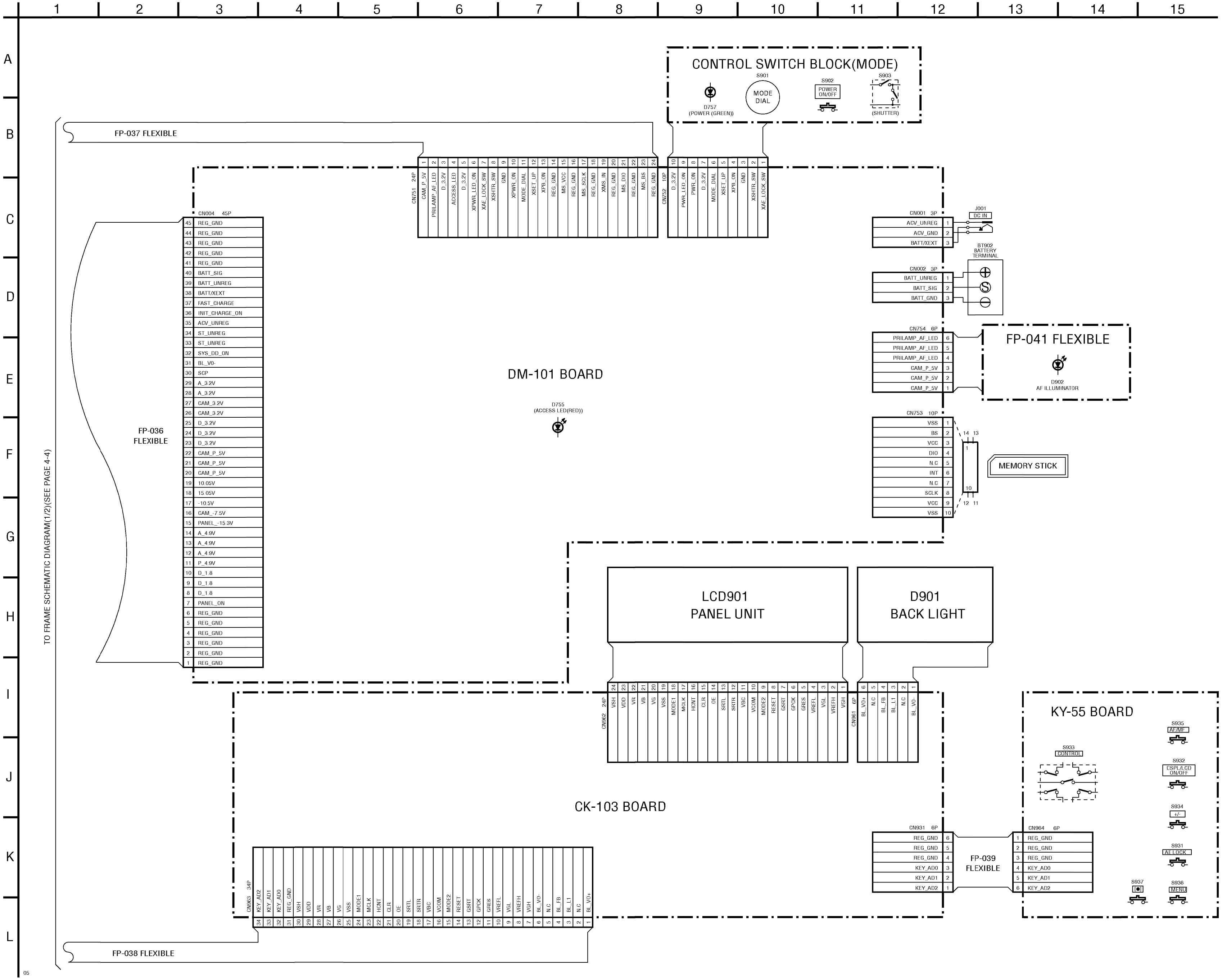
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
L
CONTROL SWITCH BLOCK(ZOOM)
S102
JOG DIAL
ZOOM
S001
W
S002
T
LCD902
CHARACTER DISPLAY
FP-389 FLEXIBLE
MIC901
MICRO PHONE
FP-037 FLEXIBLE
FLASH UNIT
CN706 8P
1 STB_CHARGE
2 STRB_PHOTO_ON
3 A_4.9V
4 UNREG_GND
5 PHOTO_TR_OUT
6 UNREG
7 STROB_ON
8 XSTB_FULL
CN403 6P
1 DIAL_A
2 DIAL_B
3 KEY_AD3
4 D_3.2V
5 N.C.
6 GND
CN402 24P
1 COM3
2 COM2
3 SEG19
4 SEG18
5 SEG17
6 SEG16
7 SEG15
8 SEG14
9 SEG13
10 SEG12
11 SEG11
12 SEG10
13 SEG9
14 SEG8
15 SEG7
16 SEG6
17 SEG5
18 SEG4
19 SEG3
20 SEG2
21 SEG1
22 SEG0
23 COM1
24 COM0
CN251 2P
1 MIC SIG
2 MIC GND
CN707 24P
1 CAM_P_5V
2 PRLAMP_AF_LED
3 D_3.2V
4 XACCESS_LED
5 D_3.2V
6 XPWR_LED_ON
7 XAE_LOCK_SW
8 XSHTR_SW
9 GND
10 XPWR_ON
11 MODE_DIAL
12 XSET_UP
13 XPB_ON
14 REG_GND
15 MS_VCC
16 GND_CARD
17 MS_SCLK
18 GND_CARD
19 XMS_IN
20 GND_CARD
21 MS_DIO
22 GND_CARD
23 MS_BS
24 REG_GND
CN701 45P
REG_GND 1
REG_GND 2
REG_GND 3
REG_GND 4
REG_GND 5
BATT_SIG 6
BATT_UNREG 7
BATT/XEXT 8
FAST_CHARGE 9
INIT_CHARGE_ON 10
ACV_UNREG 11
ST_UNREG 12
ST_UNREG 13
SYS_DD_ON 14
BL_VO- 15
SCP 16
A_3.2V 17
A_3.2V 18
CAM_3.2V 19
CAM_3.2V 20
D_3.2V 21
D_3.2V 22
D_3.2V 23
CAM_P_5V 24
CAM_P_5V 25
CAM_P_5V 26
10.05V 27
15.05V 28
-10.5V 29
CAM_-7.5V 30
PANEL_-15.3V 31
A_4.9V 32
A_4.9V 33
A_4.9V 34
P_4.9V 35
D_1.8 36
D_1.8 37
D_1.8 38
PANEL_ON 39
REG_GND 40
REG_GND 41
REG_GND 42
REG_GND 43
REG_GND 44
REG_GND 45
FP-036
FLEXIBLE
TO FRAME SCHEMATIC DIAGRAM(2/2)(PAGE 4-5)
SP901
SPEAKER
CN252 2P
1 SP +
2 SP -
SY-68 BOARD
D404
(FLASH (AMBER))
D503
(SELF TIMER/REC(RED))
D504
(AE LOCK(GREEN))
S401
(RESET)
JK-210 BOARD
CN902 5P
1 VCC
2 D-
3 D+
4 ID
5 GND
6
7
USB
CN901 18P
LANC_DC 18
EXT_STROB_ON 17
XLANC_JACK_IN 16
LANC_SIG 15
REG_GND 14
VL_3V 13
REG_GND 12
AV_JACK_IN 11
REG_GND 10
V_OUT 9
REG_GND 8
A_OUT 7
REG_GND 6
REG_GND 5
D+ 4
D- 3
REG_GND 2
USB_DET 1
J901
ACC
J902
A/V OUT
BT901
(LITHIUM BATTERY)
FP-040 FLEXIBLE
CN703 20P
1 LANC_DC
2 EXT_STRB_ON
3 XLANC_JACK_IN
4 LANC_SIG
5 REG_GND
6 VL_3V
7 REG_GND
8 AV_JACK_IN
9 REG_GND
10 V_OUT
11 REG_GND
12 A_OUT
13 REG_GND
14 REG_GND
15 USB_D+
16 USB_D-
17 REG_GND
18 USB_DET
19 REG_GND
20 LENS_CAP_OPN
LENZ CAP
SENSOR
CN201 16P
1 Z_SENS_GND
2 Z_SENS_VCC
3 Z_SENS_RST
4 TEMP_COM_(GND)
5 FOCUS_B
6 FOCUS_A
7 FOCUS_B
8 FOCUS_A
9 ZOOM_B
10 ZOOM_A
11 ZOOM_A
12 ZOOM_B
13 F_SENS_GND
14 F_SENS_VCC
15 F_SENS_RST
16 N.C.
CN202 6P
1 N.C.
2 IRIS_A
3 IRIS_B
4 IRIS_A
5 IRIS_B
6 N.C.
LENZ UNIT
CCD
IMAGER
CN401 18P
N.C 18
N.C 17
N.C 16
N.C 15
N.C 14
N.C 13
LANC_OUT 12
LANC_IN 11
HI_UNREG 10
VG 9
PANEL_COM 8
HSY 7
BL_L2 6
N.C 5
REG_GND 4
N.C 3
N.C 2
BL_L1 1
CPC
(FOR CHECK)
CN801 34P
1 BL_VO-
2 N.C
3 BL_L1
4 BL_FR
5 N.C
6 BL_VO+
7 VGH
8 VREFH
9 VGL
10 VREFL
11 GRES
12 GPCK
13 GSRT
14 RESET
15 MODE2
16 VCOM
17 VBC
18 SRTR
19 SRTL
20 OE
21 CLR
22 HCNT
23 MCLK
24 MODE1
25 VSS
26 VG
27 VB
28 VR
29 VDD
30 VSH
31 REG_GND
32 KEY_AD0
33 KEY_AD1
34 KEY_AD2
FP-038 FLEXIBLE
05

FRAME SCHEMATIC DIAGRAM (2/2)


1
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3
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6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
L
CONTROL SWITCH BLOCK(MODE)
S901
MODE DIAL
S902
POWER ON/OFF
S903
(SHUTTER)
D757
(POWER (GREEN))
FP-037 FLEXIBLE
CN751 24P
1 CAM_P_5V
2 PRILAMP_AF_LED
3 D_3.2V
4 ACCESS_LED
5 D_3.2V
6 XPWR_LED_ON
7 XAE_LOCK_SW
8 XSHTR_SW
9 GND
10 XPWR_ON
11 MODE_DIAL
12 XSET_UP
13 XPB_ON
14 REG_GND
15 MS_VCC
16 REG_GND
17 MS_SCLK
18 REG_GND
19 XMS_IN
20 REG_GND
21 MS_DIO
22 REG_GND
23 MS_BS
24 REG_GND
CN752 10P
10 D_3.2V
9 PWR_LED_ON
8 PWR_ON
7 D_3.2V
6 MODE_DIAL
5 XSET_UP
4 XPB_ON
3 GND
2 XSHTR_SW
1 XAE_LOCK_SW
CN004 45P
45 REG_GND
44 REG_GND
43 REG_GND
42 REG_GND
41 REG_GND
40 BATT_SIG
39 BATT_UNREG
38 BATT/XEXT
37 FAST_CHARGE
36 INIT_CHARGE_ON
35 ACV_UNREG
34 ST_UNREG
33 ST_UNREG
32 SYS_DD_ON
31 BL_V0-
30 SCP
29 A_3.2V
28 A_3.2V
27 CAM_3.2V
26 CAM_3.2V
25 D_3.2V
24 D_3.2V
23 D_3.2V
22 CAM_P_5V
21 CAM_P_5V
20 CAM_P_5V
19 10.05V
18 15.05V
17 -10.5V
16 CAM_-7.5V
15 PANEL_-15.3V
14 A_4.9V
13 A_4.9V
12 A_4.9V
11 P_4.9V
10 D_1.8
9 D_1.8
8 D_1.8
7 PANEL_ON
6 REG_GND
5 REG_GND
4 REG_GND
3 REG_GND
2 REG_GND
1 REG_GND
FP-036 FLEXIBLE
TO FRAME SCHEMATIC DIAGRAM(1/2)(SEE PAGE 4-4)
DM-101 BOARD
D755
(ACCESS LED(RED))
CN001 3P
ACV_UNREG 1
ACV_GND 2
BATT/XEXT 3
J001
DC IN
BT902
BATTERY TERMINAL
CN002 3P
BATT_UNREG 1
BATT_SIG 2
BATT_GND 3
CN754 6P
PRILAMP_AF_LED 6
PRILAMP_AF_LED 5
PRILAMP_AF_LED 4
CAM_P_5V 3
CAM_P_5V 2
CAM_P_5V 1
FP-041 FLEXIBLE
D902
AF ILLUMINATOR
CN753 10P
VSS 1
BS 2
VCC 3
DIO 4
N.C 5
INT 6
N.C 7
SCLK 8
VCC 9
VSS 10
14 13
1
10
12 11
MEMORY STICK
LCD901
PANEL UNIT
D901
BACK LIGHT
CN962 24P
24 VSH
23 VDD
22 VR
21 VB
20 VG
19 VSS
18 MODE1
17 MCLK
16 HCNT
15 CLR
14 OE
13 SRTL
12 SRTR
11 VBC
10 VCOM
9 MODE2
8 RESET
7 GSRT
6 GPCK
5 GRES
4 VREFL
3 VGL
2 VREFH
1 VGH
CN961 6P
6 BL_VO+
5 N.C
4 BL_FB
3 BL_L1
2 N.C
1 BL_VO-
CK-103 BOARD
CN963 34P
34 KEY_AD2
33 KEY_AD1
32 KEY_AD0
31 REG_GND
30 VSH
29 VDD
28 VR
27 VB
26 VG
25 VSS
24 MODE1
23 MCLK
22 HCNT
21 CLR
20 OE
19 SRTL
18 SRTR
17 VBC
16 VCOM
15 MODE2
14 RESET
13 GSRT
12 GPCK
11 GRES
10 VREFL
9 VGL
8 VREFH
7 VGH
6 BL_VO-
5 N.C
4 BL_FB
3 BL_L1
2 N.C
1 BL_VO+
CN931 6P
REG_GND 6
REG_GND 5
REG_GND 4
KEY_AD0 3
KEY_AD1 2
KEY_AD2 1
FP-039 FLEXIBLE
CN964 6P
1 REG_GND
2 REG_GND
3 REG_GND
4 KEY_AD0
5 KEY_AD1
6 KEY_AD2
KY-55 BOARD
S935
AF/MF
S933
CONTROL
S932
DSPL/LCD ON/OFF
S934
+/-
S931
AE LOCK
S937
[●]
S936
MENU
FP-038 FLEXIBLE
05

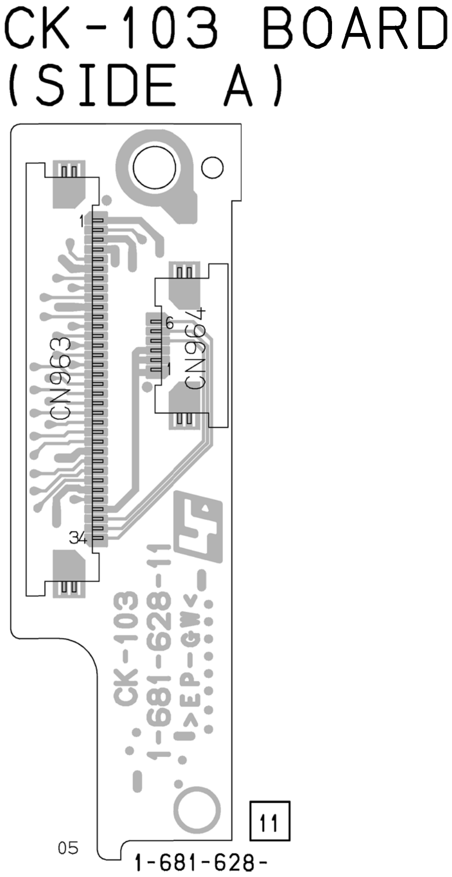
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

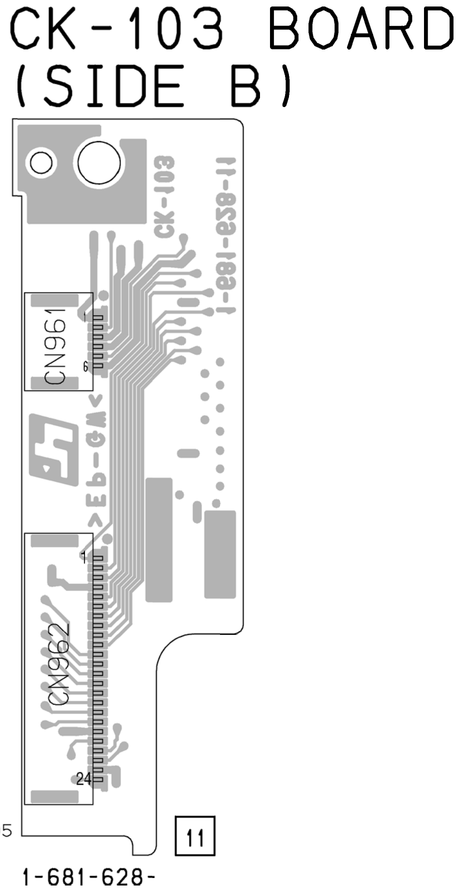
CK-103 (CONNECTION) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

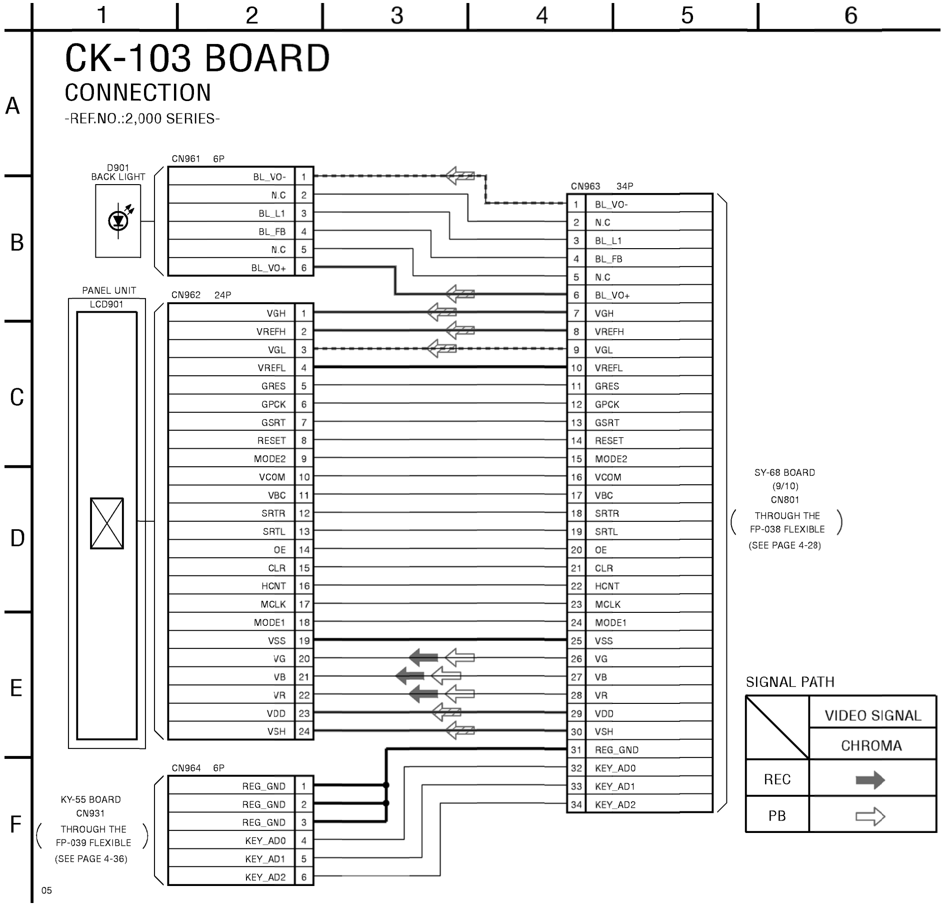
– Ref. No.: CK-103 board; 2,000 series –

• For Printed Wiring Board.

- LF :Uses unleaded solder.
- CK-103 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.


CK-103 BOARD
(SIDE A)
CN963
CN964
1
34
6
1
CK-103
1-681-628-11
1>EP-GW<
11
05
1-681-628-

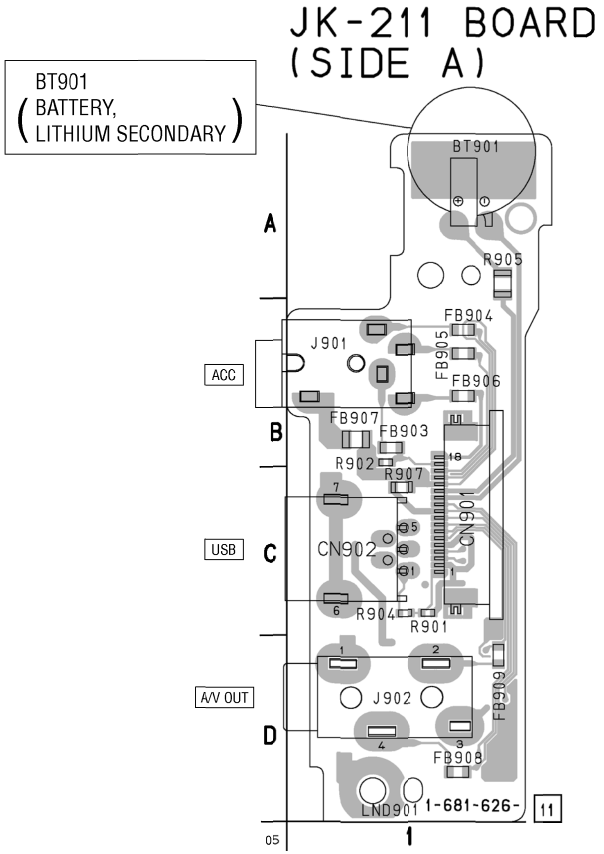

CK-103 BOARD
(SIDE B)
CK-103
1-681-628-11
CN961
1
6
CN962
1
24
>EP-GW<
11
05
1-681-628-

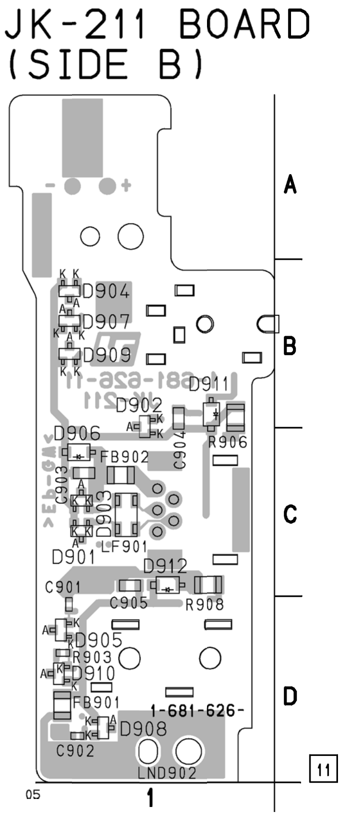

1
2
3
4
5
6
A
B
C
D
E
F
CK-103 BOARD
CONNECTION
-REF.NO.:2,000 SERIES-
D901
BACK LIGHT
CN961 6P
BL_VO- 1
N.C 2
BL_L1 3
BL_FB 4
N.C 5
BL_VO+ 6
PANEL UNIT
LCD901
CN962 24P
VGH 1
VREFH 2
VGL 3
VREFL 4
GRES 5
GPCK 6
GSRT 7
RESET 8
MODE2 9
VCOM 10
VBC 11
SRTR 12
SRTL 13
OE 14
CLR 15
HCNT 16
MCLK 17
MODE1 18
VSS 19
VG 20
VB 21
VR 22
VDD 23
VSH 24
CN964 6P
REG_GND 1
REG_GND 2
REG_GND 3
KEY_AD0 4
KEY_AD1 5
KEY_AD2 6
KY-55 BOARD
CN931
(THROUGH THE
FP-039 FLEXIBLE)
(SEE PAGE 4-36)
05
CN963 34P
1 BL_VO-
2 N.C
3 BL_L1
4 BL_FB
5 N.C
6 BL_VO+
7 VGH
8 VREFH
9 VGL
10 VREFL
11 GRES
12 GPCK
13 GSRT
14 RESET
15 MODE2
16 VCOM
17 VBC
18 SRTR
19 SRTL
20 OE
21 CLR
22 HCNT
23 MCLK
24 MODE1
25 VSS
26 VG
27 VB
28 VR
29 VDD
30 VSH
31 REG_GND
32 KEY_AD0
33 KEY_AD1
34 KEY_AD2
SY-68 BOARD
(9/10)
CN801
(THROUGH THE
FP-038 FLEXIBLE)
(SEE PAGE 4-28)
SIGNAL PATH
VIDEO SIGNAL
CHROMA
REC
PB

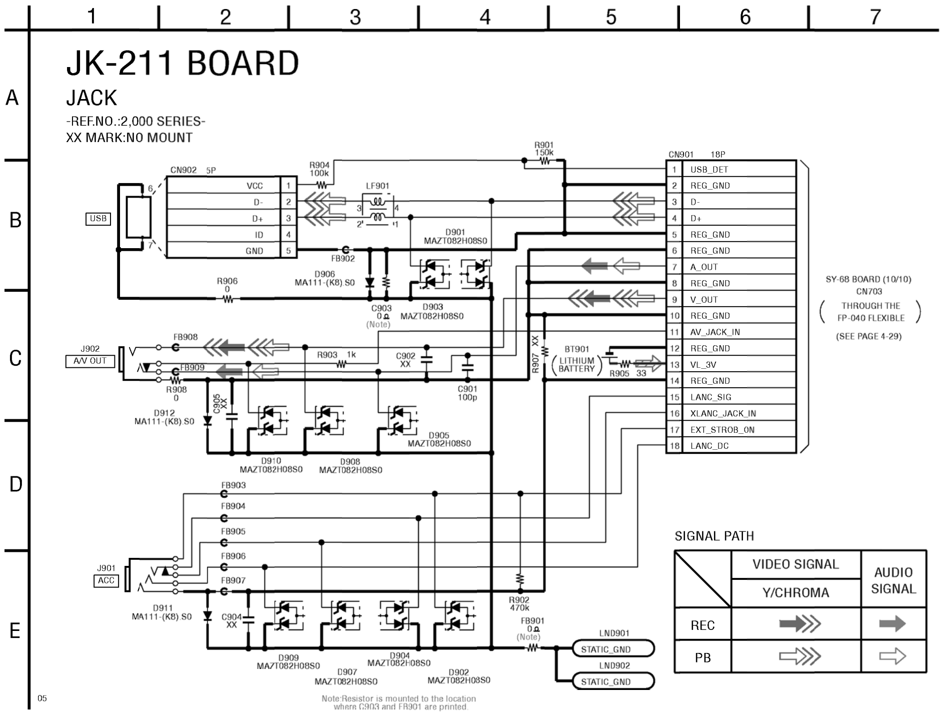
JK-211 (JACK) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

• For Printed Wiring Board.

- 🄻🄵 :Uses unleaded solder.
- JK-211 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-46 for printed parts location.


JK-211 BOARD
(SIDE A)
BT901
(BATTERY,
LITHIUM SECONDARY)
BT901
R905
FB904
J901
FB905
FB906
FB907
FB903
R902
R907
CN901
CN902
R904
R901
J902
FB909
FB908
LND901
1-681-626-
11
ACC
USB
A/V OUT
A
B
C
D
05
1

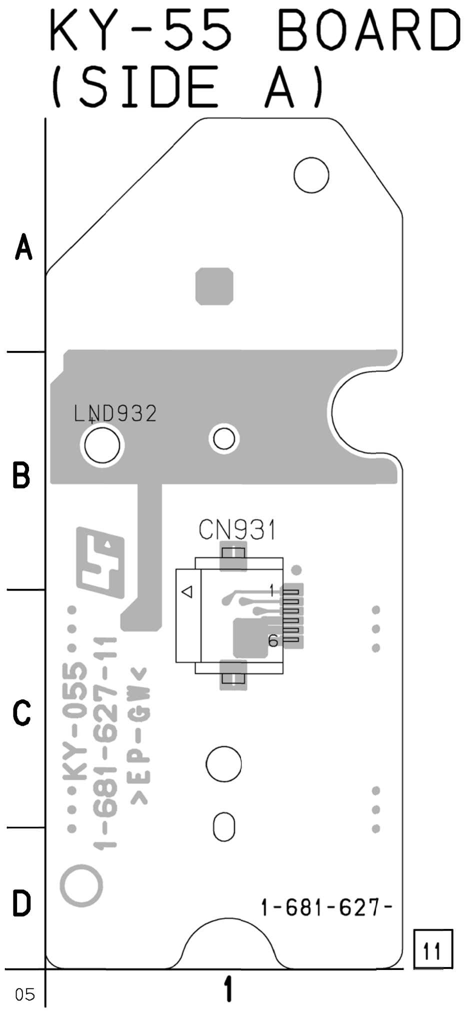

JK-211 BOARD
(SIDE B)
D904
D907
D909
D911
D902
D906
FB902
C903
D903
R906
C904
D901
F901
D912
C901
C905
R908
D905
R903
D910
FB901
D908
C902
LND902
1-681-626-
11
A
B
C
D
05
1

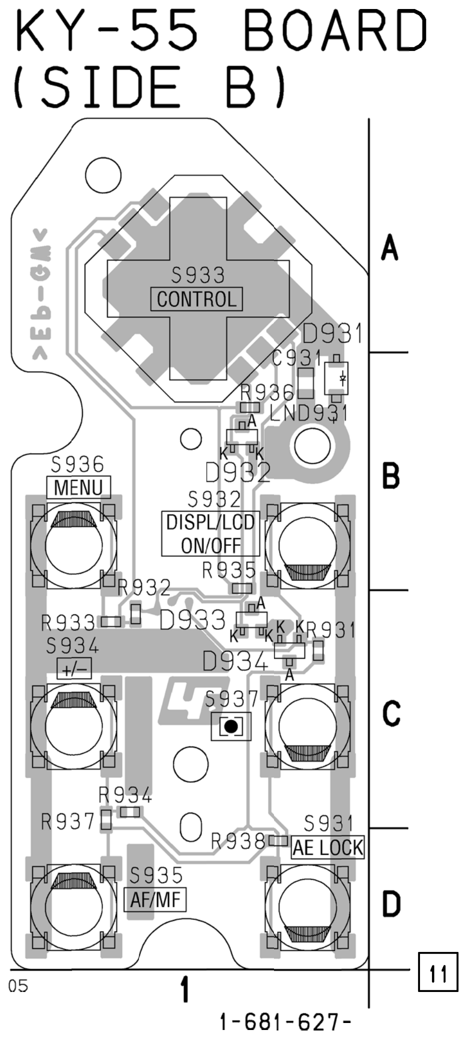

1
2
3
4
5
6
7
A
B
C
D
E
JK-211 BOARD
JACK
-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT
USB
CN902 5P
VCC 1
D- 2
D+ 3
ID 4
GND 5
R904
100k
LF901
R901
150k
FB902
D906
MA111-(K8).S0
R906
0
C903
0
(Note)
D901
MAZT082H08S0
D903
MAZT082H08S0
J902
A/V OUT
FB908
FB909
R908
0
R903 1k
C902
XX
C901
100p
C905
XX
D912
MA111-(K8).S0
D910
MAZT082H08S0
D908
MAZT082H08S0
D905
MAZT082H08S0
R907 XX
BT901
(LITHIUM BATTERY)
R905 33
CN901 18P
1 USB_DET
2 REG_GND
3 D-
4 D+
5 REG_GND
6 REG_GND
7 A_OUT
8 REG_GND
9 V_OUT
10 REG_GND
11 AV_JACK_IN
12 REG_GND
13 VL_3V
14 REG_GND
15 LANC_SIG
16 XLANC_JACK_IN
17 EXT_STROB_0N
18 LANC_DC
SY-68 BOARD (10/10)
CN703
(THROUGH THE FP-040 FLEXIBLE)
(SEE PAGE 4-29)
FB903
FB904
FB905
FB906
FB907
J901
ACC
D911
MA111-(K8).S0
C904
XX
R902
470k
FB901
0
(Note)
D909
MAZT082H08S0
D907
MAZT082H08S0
D904
MAZT082H08S0
D902
MAZT082H08S0
LND901
STATIC_GND
LND902
STATIC_GND
Note:Resistor is mounted to the location where C903 and FB901 are printed.
SIGNAL PATH
VIDEO SIGNAL
Y/CHROMA
AUDIO SIGNAL
REC
PB
05

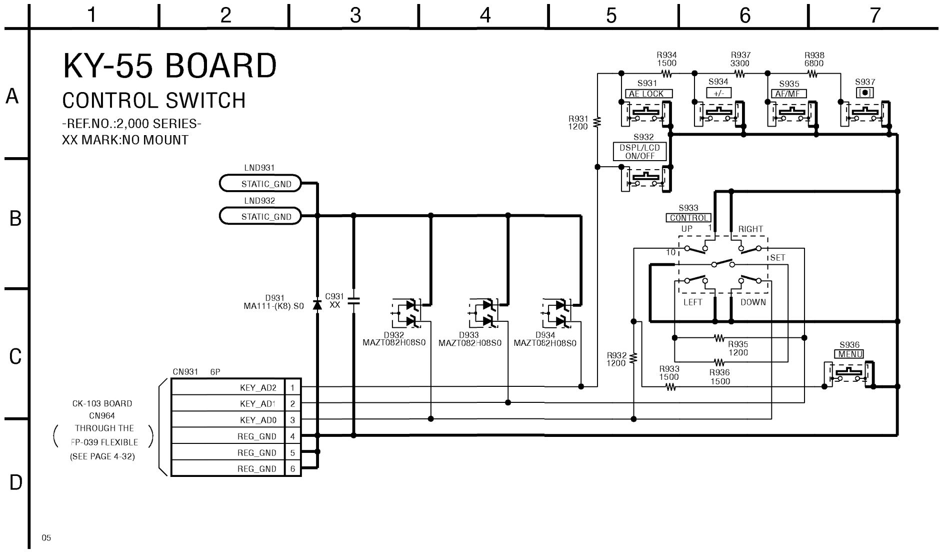
KY-55 (CONTROL SWITCH) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: KY-55 board; 2,000 series –

- **For Printed Wiring Board.**
- 🅻🅵 :Uses unleaded solder.
- KY-55 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-46 for printed parts location.


KY-55 BOARD
(SIDE A)
A
B
C
D
LND932
CN931
1
6
• • •KY-055• • •
1-681-627-11
>EP-GW<
1-681-627-
11
05
1

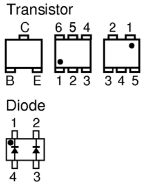

KY-55 BOARD
(SIDE B)
A
B
C
D
>Eb-GW<
S933
CONTROL
D931
C931
R936
LND931
A
K
K
D932
S936
MENU
S932
DISPL/LCD
ON/OFF
R935
R932
R933
D933
A
K
K
K
R931
S934
+/–
D934
A
S937
R934
R937
R938
S931
AE LOCK
S935
AF/MF
11
05
1
1-681-627-

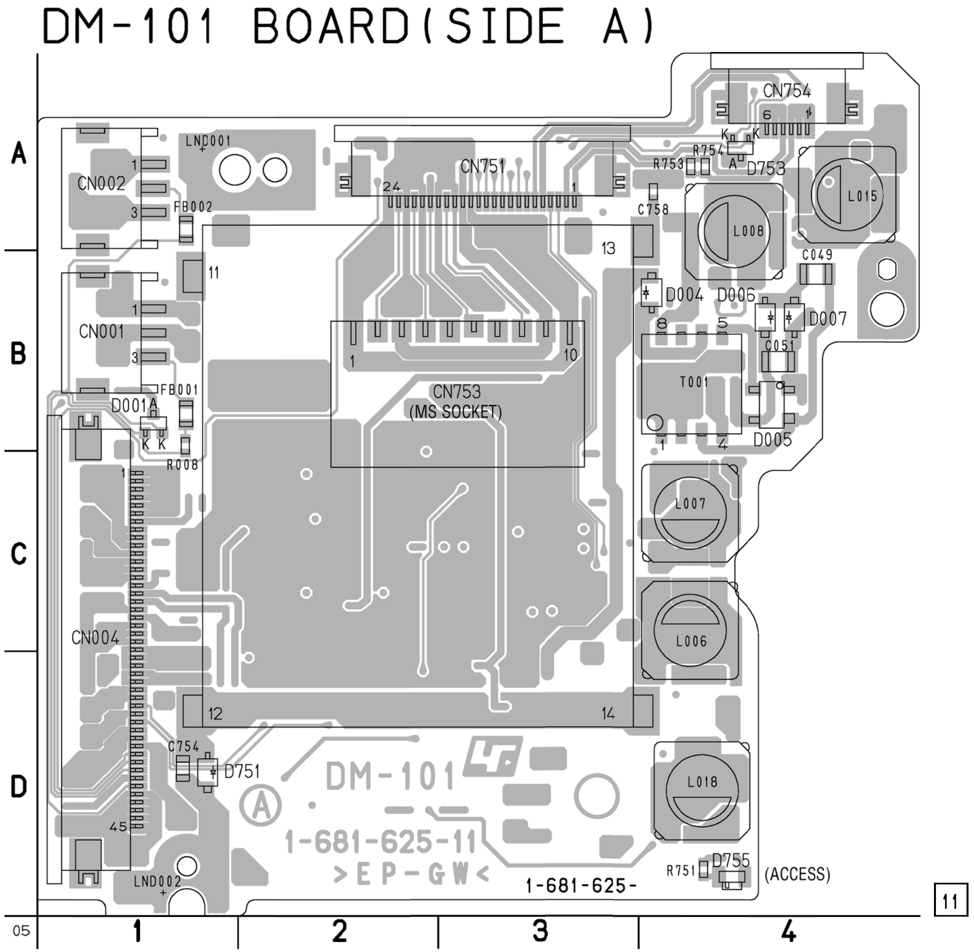

1
2
3
4
5
6
7
A
B
C
D
KY-55 BOARD
CONTROL SWITCH
-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT
R934
1500
R937
3300
R938
6800
S931
AE LOCK
S934
+/-
S935
AF/MF
S937
R931
1200
S932
DSPL/LCD
ON/OFF
LND931
STATIC_GND
LND932
STATIC_GND
S933
CONTROL
UP
1
RIGHT
10
SET
LEFT
DOWN
D931
MA111-(K8).S0
C931
XX
D932
MAZT082H08S0
D933
MAZT082H08S0
D934
MAZT082H08S0
R935
1200
R932
1200
R933
1500
R936
1500
S936
MENU
CN931 6P
KEY_AD2 1
KEY_AD1 2
KEY_AD0 3
REG_GND 4
REG_GND 5
REG_GND 6
CK-103 BOARD
CN964
THROUGH THE
FP-039 FLEXIBLE
(SEE PAGE 4-32)
05

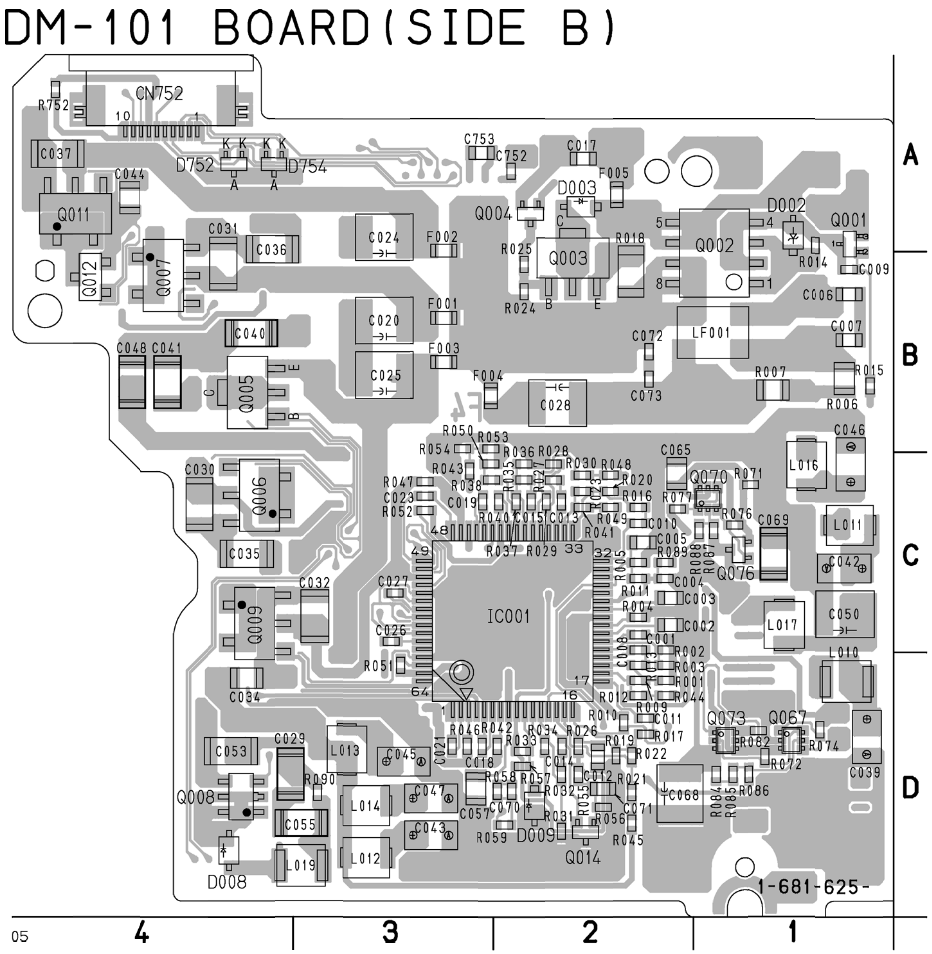
DM-101 (DC/DC CONVERTER, MS SOCKET) PRINTED WIRING BOARD

– Ref. No.: DM-101 board; 2,000 series –

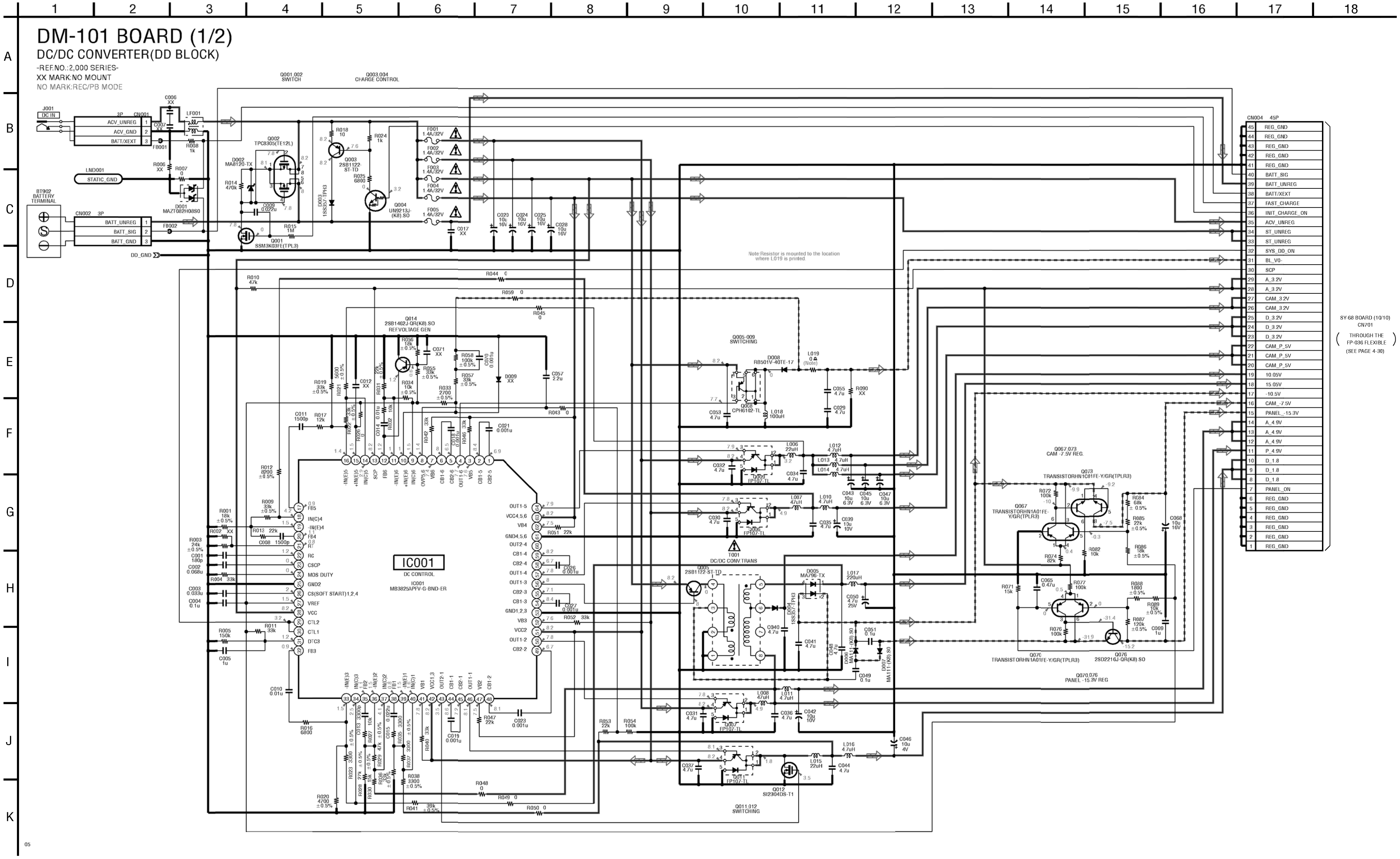
- **For Printed Wiring Board.**
- LF :Uses unleaded solder.
- DM-101 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-46 for printed parts location.
- Chip parts


Transistor
C
B
E
6 5 4
1 2 3
2 1
3 4 5
Diode
1 2
4 3


DM-101 BOARD(SIDE A)
A
B
C
D
1
2
3
4
05
CN754
CN751
24
LND001
CN002
FB002
R753
R754
D753
L015
C758
L008
13
11
C049
D004
D006
D007
CN001
C051
CN753
(MS SOCKET)
T001
D001
FB001
R008
D005
L007
CN004
L006
12
14
C754
D751
L018
DM-101
1-681-625-11
>EP-GW<
1-681-625-
R751
D755
(ACCESS)
45
LND002
11

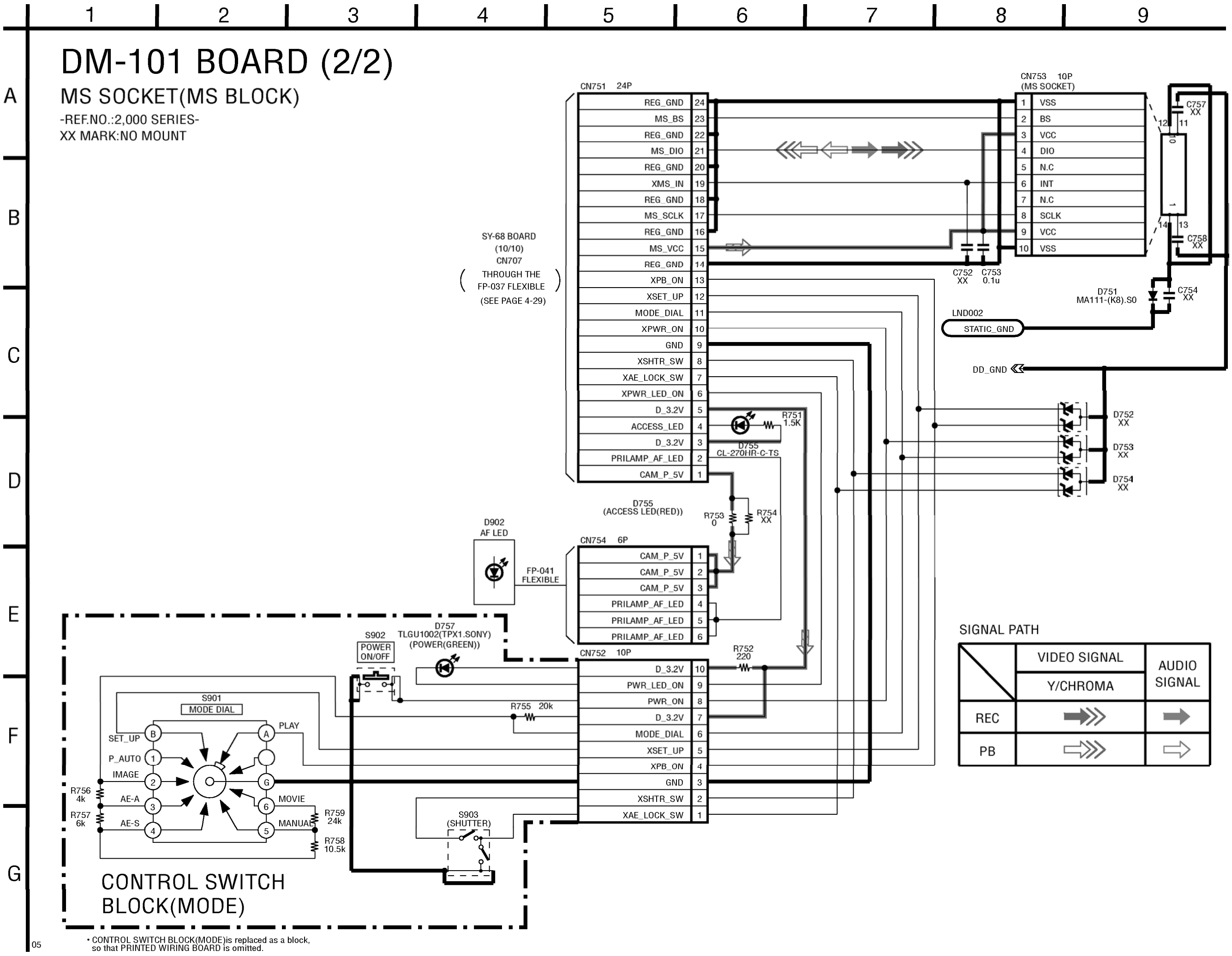

DM-101 BOARD(SIDE B)
A
B
C
D
4
3
2
1
05
R752
CN752
C037
C044
D752
D754
Q011
Q012
Q007
C031
C036
C024
F002
C753
C752
C017
F005
D003
Q004
Q003
R018
R025
R024
Q002
D002
Q001
R014
C009
C006
C007
C040
C020
F001
F003
C025
F004
C048
C041
Q005
C028
C072
C073
LF001
R007
R015
R006
C046
C030
Q006
C065
Q070
R071
L016
C069
L011
Q076
C042
C035
C032
C027
C026
R051
IC001
L017
C050
L010
C034
Q009
C053
C029
L013
C045
Q008
R090
L014
C047
C055
C043
L019
L012
D008
R059
D009
Q014
C068
Q073
Q067
C039
1-681-625-
11

DM-101 (DC/DC CONVERTER) SCHEMATIC DIAGRAM • See page 4-37 for DM-101 printed wiring board.


DM-101 BOARD (1/2)
DC/DC CONVERTER(DD BLOCK)
-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
J001 DC IN
CN001 3P
ACV_UNREG
ACV_GND
BATT/XEXT
LND001 STATIC_GND
BT902 BATTERY TERMINAL
CN002 3P
BATT_UNREG
BATT_SIG
BATT_GND
DD_GND
Q001,002 SWITCH
Q003,004 CHARGE CONTROL
Q002 TPC8305(TE12L)
Q003 2SB1122-ST-TD
Q004 UN9213J-(K8).SO
Q001 SSM3K03FE(TPL3)
D001 MAZT082H08S0
D002 MA8120-TX
D003 1SS357-TPH3
F001 1.4A/32V
F002 1.4A/32V
F003 1.4A/32V
F004 1.4A/32V
F005 1.4A/32V
Q014 2SB1462J-QR(K8).SO REF VOLTAGE GEN
IC001 DC CONTROL MB3825APFV-G-BND-ER
Q005-009 SWITCHING
D008 RB501V-40TE-17
Q008 CPH6102-TL
Note:Resistor is mounted to the location where L019 is printed.
T001 DC/DC CONV.TRANS
Q005 2SB1122-ST-TD
D005 MA796-TX
D004 1SS357-TPH3
D006 MA111-(K8).SO
D007 MA111-(K8).SO
Q011,012 SWITCHING
Q012 SI2304DS-T1
Q067,073 CAM -7.5V REG
Q073 TRANSISTORHN1C01FE-Y/GR(TPLR3)
Q067 TRANSISTORHN1A01FE-Y/GR(TPLR3)
Q070 TRANSISTORHN1A01FE-Y/GR(TPLR3)
Q076 2SD2216J-QR(K8).SO
Q070,076 PANEL -15.3V REG
CN004 45P
45 REG_GND
44 REG_GND
43 REG_GND
42 REG_GND
41 REG_GND
40 BATT_SIG
39 BATT_UNREG
38 BATT/XEXT
37 FAST_CHARGE
36 INIT_CHARGE_ON
35 ACV_UNREG
34 ST_UNREG
33 ST_UNREG
32 SYS_DD_ON
31 BL_VO-
30 SCP
29 A_3.2V
28 A_3.2V
27 CAM_3.2V
26 CAM_3.2V
25 D_3.2V
24 D_3.2V
23 D_3.2V
22 CAM_P_5V
21 CAM_P_5V
20 CAM_P_5V
19 10.05V
18 15.05V
17 -10.5V
16 CAM_-7.5V
15 PANEL_-15.3V
14 A_4.9V
13 A_4.9V
12 A_4.9V
11 P_4.9V
10 D_1.8
9 D_1.8
8 D_1.8
7 PANEL_ON
6 REG_GND
5 REG_GND
4 REG_GND
3 REG_GND
2 REG_GND
1 REG_GND
SY-68 BOARD (10/10) CN701
(THROUGH THE FP-036 FLEXIBLE (SEE PAGE 4-30))
05

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

DM-101 (MS SOCKET) SCHEMATIC DIAGRAM • See page 4-37 for DM-101 printed wiring board.


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
DM-101 BOARD (2/2)
MS SOCKET(MS BLOCK)
-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT
CN751 24P
REG_GND 24
MS_BS 23
REG_GND 22
MS_DIO 21
REG_GND 20
XMS_IN 19
REG_GND 18
MS_SCLK 17
REG_GND 16
MS_VCC 15
REG_GND 14
XPB_ON 13
XSET_UP 12
MODE_DIAL 11
XPWR_ON 10
GND 9
XSHTR_SW 8
XAE_LOCK_SW 7
XPWR_LED_ON 6
D_3.2V 5
ACCESS_LED 4
D_3.2V 3
PRILAMP_AF_LED 2
CAM_P_5V 1
SY-68 BOARD (10/10) CN707 THROUGH THE FP-037 FLEXIBLE (SEE PAGE 4-29)
CN753 10P (MS SOCKET)
1 VSS
2 BS
3 VCC
4 DIO
5 N.C
6 INT
7 N.C
8 SCLK
9 VCC
10 VSS
C757 XX
C758 XX
C752 XX
C753 0.1u
D751 MA111-(K8).S0
C754 XX
LND002
STATIC_GND
DD_GND
D752 XX
D753 XX
D754 XX
R751 1.5K
D755 CL-270HR-C-TS
D755 (ACCESS LED(RED))
R753 0
R754 XX
D902 AF LED
FP-041 FLEXIBLE
CN754 6P
CAM_P_5V 1
CAM_P_5V 2
CAM_P_5V 3
PRILAMP_AF_LED 4
PRILAMP_AF_LED 5
PRILAMP_AF_LED 6
S902 POWER ON/OFF
D757 TLGU1002(TPX1.SONY) (POWER(GREEN))
CN752 10P
R752 220
D_3.2V 10
PWR_LED_ON 9
PWR_ON 8
D_3.2V 7
MODE_DIAL 6
XSET_UP 5
XPB_ON 4
GND 3
XSHTR_SW 2
XAE_LOCK_SW 1
R755 20k
S901 MODE DIAL
SET_UP
P_AUTO
IMAGE
AE-A
AE-S
PLAY
MOVIE
MANUAL
R756 4k
R757 6k
R759 24k
R758 10.5k
S903 (SHUTTER)
CONTROL SWITCH BLOCK(MODE)
SIGNAL PATH
VIDEO SIGNAL
Y/CHROMA
AUDIO SIGNAL
REC
PB
05

• CONTROL SWITCH BLOCK(MODE)is replaced as a block, so that PRINTED WIRING BOARD is omitted.

4-4. PARTS LOCATION

no mark: SIDE A
* mark : SIDE B

JK-211 BOARD

	BT901	A-1
*	C901	D-1
*	C903	C-1
	CN901	C-1
	CN902	C-1
*	D901	C-1
*	D902	B-1
*	D903	C-1
*	D904	B-1
*	D905	D-1
*	D906	C-1
*	D907	B-1
*	D908	D-1
*	D909	B-1
*	D910	D-1
*	D911	B-1
*	D912	C-1
*	FB901	D-1
*	FB902	C-1
	FB903	B-1
	FB904	B-1
	FB905	B-1
	FB906	B-1
	FB907	B-1
	FB908	D-1
	FB909	D-1
	J901	B-1
	J902	D-1
*	LF901	C-1
	R901	C-1
	R902	B-1
*	R903	D-1
	R904	C-1
	R905	A-1
*	R906	C-1
*	R908	C-1

KY-55 BOARD

	CN931	C-1
*	D931	B-1
*	D932	B-1
*	D933	C-1
*	D934	C-1
*	R931	C-1
*	R932	C-1
*	R933	C-1
*	R934	C-1
*	R935	B-1
*	R936	B-1
*	R937	C-1
*	R938	D-1
*	S931	D-1
*	S932	B-1
*	S933	A-1
*	S934	C-1
*	S935	D-1
*	S936	B-1
*	S937	C-1

DM-101 BOARD

*	C001	C-2
*	C002	C-2
*	C003	C-2
*	C004	C-2
*	C005	C-2
*	C008	C-2
*	C009	B-1
*	C010	C-2
*	C011	D-2
*	C013	C-2
*	C014	D-2
*	C015	C-2
*	C018	D-3
*	C019	C-3
*	C020	B-3
*	C021	D-3
*	C023	C-3
*	C024	A-3
*	C025	B-3
*	C026	C-3
*	C027	C-3
*	C028	B-2
*	C029	D-4
*	C030	C-4
*	C031	B-4
*	C032	C-3
*	C034	D-4
*	C035	C-4
*	C036	A-4
*	C037	A-4
*	C039	D-1
*	C040	B-4
*	C041	B-4
*	C042	C-1
*	C043	D-3
*	C044	A-4
*	C045	D-3
*	C046	C-1
*	C047	D-3
*	C048	B-4
	C049	B-4
*	C050	C-1
	C051	B-4
*	C053	D-4
*	C055	D-3
*	C057	D-3
*	C065	C-2
*	C068	D-2
*	C069	C-1
*	C070	D-2
*	C753	A-3
	CN001	B-1
	CN002	A-1
	CN004	C-1
	CN751	A-3
*	CN752	A-4
	CN753	B-3
	CN754	A-4
	D001	B-1
*	D002	A-1
*	D003	A-2
	D004	B-4
	D005	B-4
	D006	B-4
	D007	B-4
*	D008	D-4
	D751	D-1
	D755	D-4
*	F001	B-3
*	F002	A-3
*	F003	B-3
*	F004	B-3
*	F005	A-2
	FB001	B-1
	FB002	A-1
*	IC001	C-2
	L006	C-4
*	L010	D-1
*	L011	C-1
*	L012	D-3
*	L013	D-3
*	L014	D-3
	L015	A-4
*	L016	C-1
*	L017	C-1
	L018	D-4
*	L019	D-3
*	LF001	B-1
*	Q001	A-1
*	Q002	A-1
*	Q003	B-2
*	Q004	A-2
*	Q005	B-4
*	Q006	C-4
*	Q007	B-4
*	Q008	D-4
*	Q009	C-4
*	Q011	A-4
*	Q012	B-4
*	Q014	D-2
*	Q067	D-1
*	Q070	C-1
*	Q073	D-1
*	Q076	C-1
*	R001	D-2
*	R003	D-2
*	R004	C-2
*	R005	C-2
*	R007	B-1
	R008	B-1
*	R009	D-2
*	R010	D-2
*	R011	C-2
*	R012	D-2
*	R013	D-2
*	R014	A-1
*	R015	B-1
*	R016	C-2
*	R017	D-2
*	R018	B-2
*	R019	D-2
*	R020	C-2
*	R021	D-2
*	R022	D-2
*	R023	C-2
*	R024	B-2
*	R025	B-2
*	R026	D-2
*	R027	C-2
*	R028	C-2
*	R029	C-2
*	R030	C-2
*	R031	D-2
*	R032	D-2
*	R033	D-2
*	R034	D-2
*	R035	C-2
*	R036	C-2
*	R037	C-2
*	R038	C-3
*	R040	C-2
*	R041	C-2
*	R042	D-2
*	R043	C-3
*	R044	D-2
*	R045	D-2
*	R046	D-3
*	R047	C-3
*	R048	C-2
*	R049	C-2
*	R050	C-3
*	R051	D-3
*	R052	C-3
*	R053	B-3
*	R054	B-3
*	R055	D-2
*	R056	D-2
*	R057	D-2
*	R058	D-2
*	R059	D-2
*	R071	C-1
*	R072	D-1
*	R074	D-1
*	R076	C-1
*	R077	C-2
*	R082	D-1
*	R084	D-1
*	R085	D-1
*	R086	D-1
*	R087	C-1
*	R088	C-1
*	R089	C-2
	R751	D-4
*	R752	A-4
	R753	A-4
	T001	B-4

SECTION 5
ADJUSTMENTS

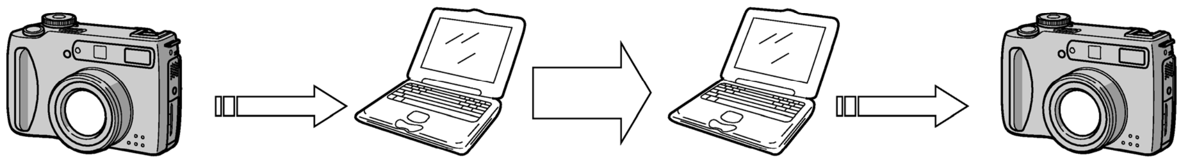
Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

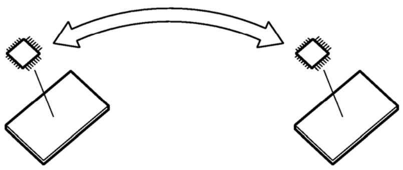
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.


(Machine before starting repair)
PC
PC
(Machine after a board is replaced)
Save the EVR data to a personal computer.
Download the saved data to a machine.

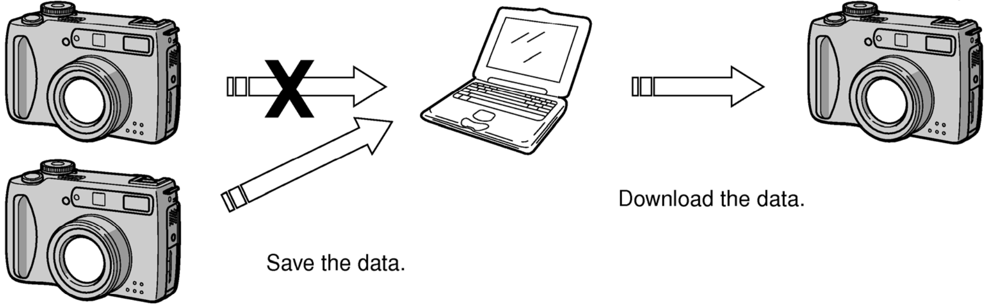
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.


Remove the EEPROM and install it.
(Former board)
(New board)

Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.


(Machine to be repaired)
PC
(Machine to be repaired)
X
Download the data.
Save the data.
(The same model of the same destination)

After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-2 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment section	Adjustment	Replaced parts												
		Block replacement				Mounted parts replacement								
		Lens device	Flash unit	LCD block LCD901 (LCD panel)	LCD block D9001 (Back light unit)	SY-68 board IC151 (CCD imager)	SY-68 board IC102 (S/H, AGC, A/D)	SY-68 board IC505 (EVR)	SY-68 board IC651 (VIDEO AMP)	SY-68 board IC802 (LCD drive)	SY-68 board IC804 (LCD Timing generator)	SY-68 board IC803 (EVR)	SY-68 board (COMPLETE)	SY-68 board IC507 EEPROM
Initialization of 7, 9, B, D, E, F, page data	Initialization of D page data												●	●
	Initialization of 7, 9, B, E, F page data												●	●
Video	Video sync level adj.							●	●				●	●
	Video burst level adj.							●	●				●	●
Camera	Flange back adj.	●				●							●	●
	F No. standard data input	●				●							●	●
	Mechanical shutter adjustment	●				●							●	●
	Light level adj.	●				●	●						●	●
	Mixed color cancel adj.	●				●	●						●	●
	Auto white balance standard data input	●				●	●						●	●
	Auto white balance adj.	●				●	●						●	●
	Color reproduction adj.	●				●	●						●	●
	CCD (white and black) defect compensation					●							●	●
	Strobe white balance adj.		●			●	●	●					●	●
LCD	LCD initial data input												●	●
	VCO adj.										●	●	●	●
	D range adj.									●		●	●	●
	Bright adj.									●		●	●	●
	Contrast adj.									●		●	●	●
	Color adj.									●		●	●	●
	V-COM level adj.									●		●	●	●
	V-COM adj.			●						●		●	●	●
	White balance adj.			●	●					●		●	●	●

Table 5-1-1

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Color monitor
- Digital voltmeter
- Vectorscope

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450	J-6082-200-A	
J-3	Color bar chart for pattern box	J-6020-250-A	
J-4	Adjusting remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-5	Siemens star chart	J-6080-875-A	For checking the flange back
J-6	Clear chart for pattern box	J-6080-621-A	
J-7	CPC-9 jig (Note 2)	J-6082-393-C	For connecting the adjusting remote commander For adjusting the LCD block
J-8	Minipattern box	J-6082-353-B	For adjusting the flange back
J-9	Back ground paper	J-2501-130-A	For adjusting the strobe

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), The pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

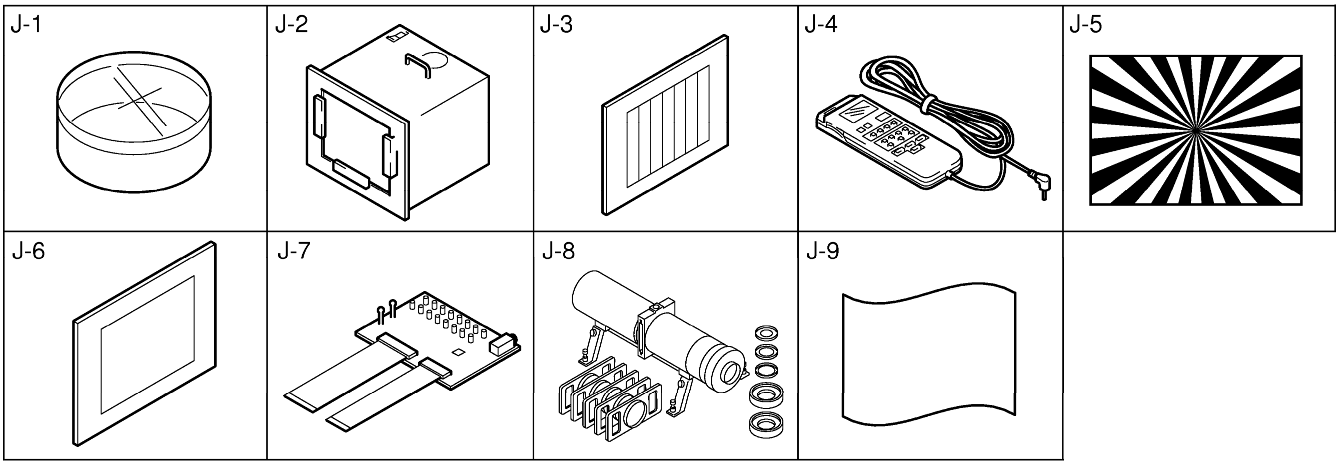


Fig. 5-1-1

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to “2. DISASSEMBLY”.

Note 2: When performing only the adjustments, the lens block and boards need not be disassemble.

1) Connect the equipment for adjustments according to Fig. 5-1-5.
2) Connect the Adjusting remote commander to SY-68 board CN401 via CPC-9 jig (J-6082-393-C). (See Fig. 5-1-3)

Note 3: Setting the “Forced CAMERA mode power ON” Mode
  1) Select page: 0, address: 01, and set data: 01.
  2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjusting remote commander.
  The above procedure will enable the camera power to be turned on. After completing adjustments, be sure to exit the “Forced CAMERA mode power ON Mode”.

Note 4: Exiting the “Forced CAMERA mode power ON Mode”
  1) Select page: 0, address: 01, and set data: 01.
  2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjusting remote commander.
  3) Select page: 0, address: 01, and set data: 00.

1-1-3. Discharging of the Flashlight Power Supply

The capacitor which is used as power supply of flashlight is charged with 200 V to 300 V voltage. Discharge this voltage before starting adjustments in order to protect service engineers from electric shock during adjustment.

Discharge procedure

1. Press the FLASH button (KY-55 board S933 (CONTROL UP)) and turn off the FLASH LED (SY-68 board D404).
2. Fabricate the discharging jig as shown in Fig. 5-1-5 locally by yourself. Connect the discharging jig to the positive (+) and negative (–) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

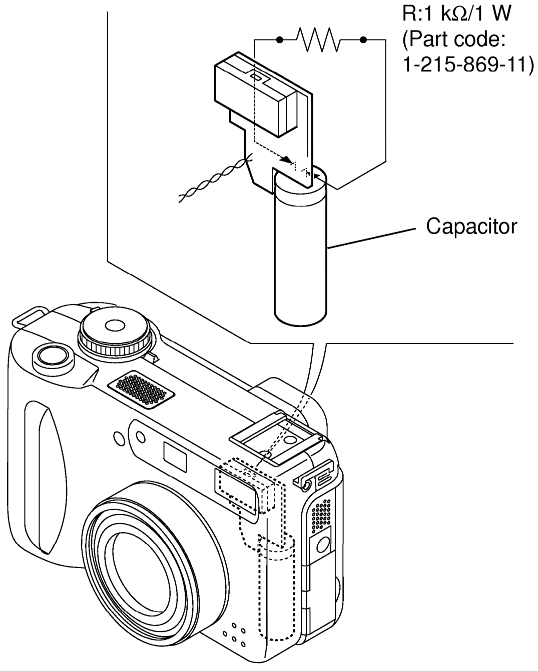


Fig. 5-1-4

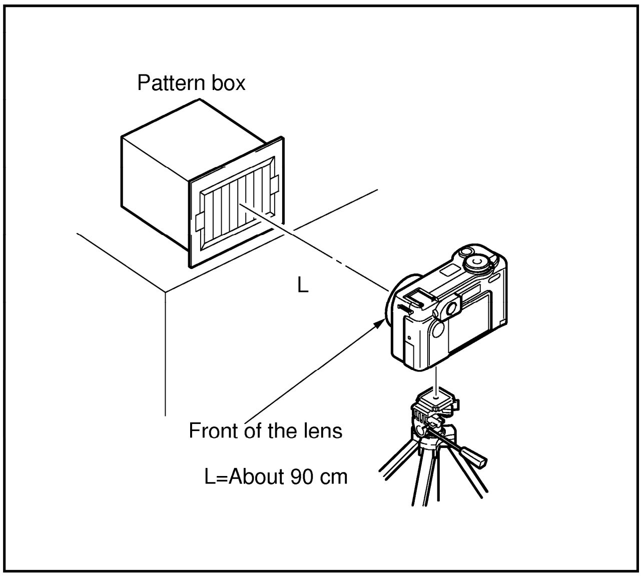
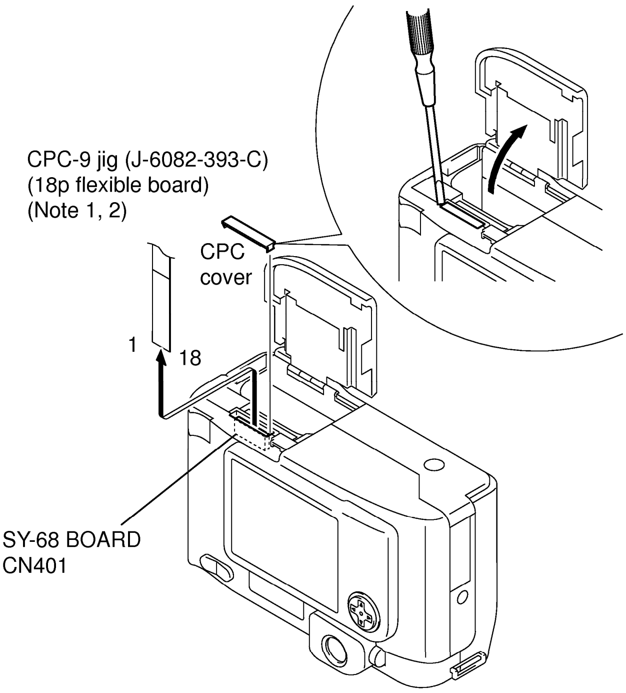


Fig. 5-1-2



Note 1: Don t use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.

Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

Fig. 5-1-3

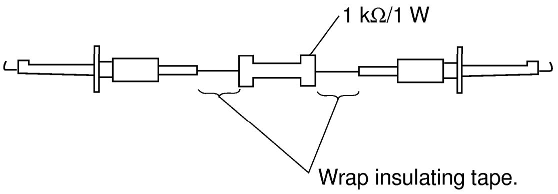
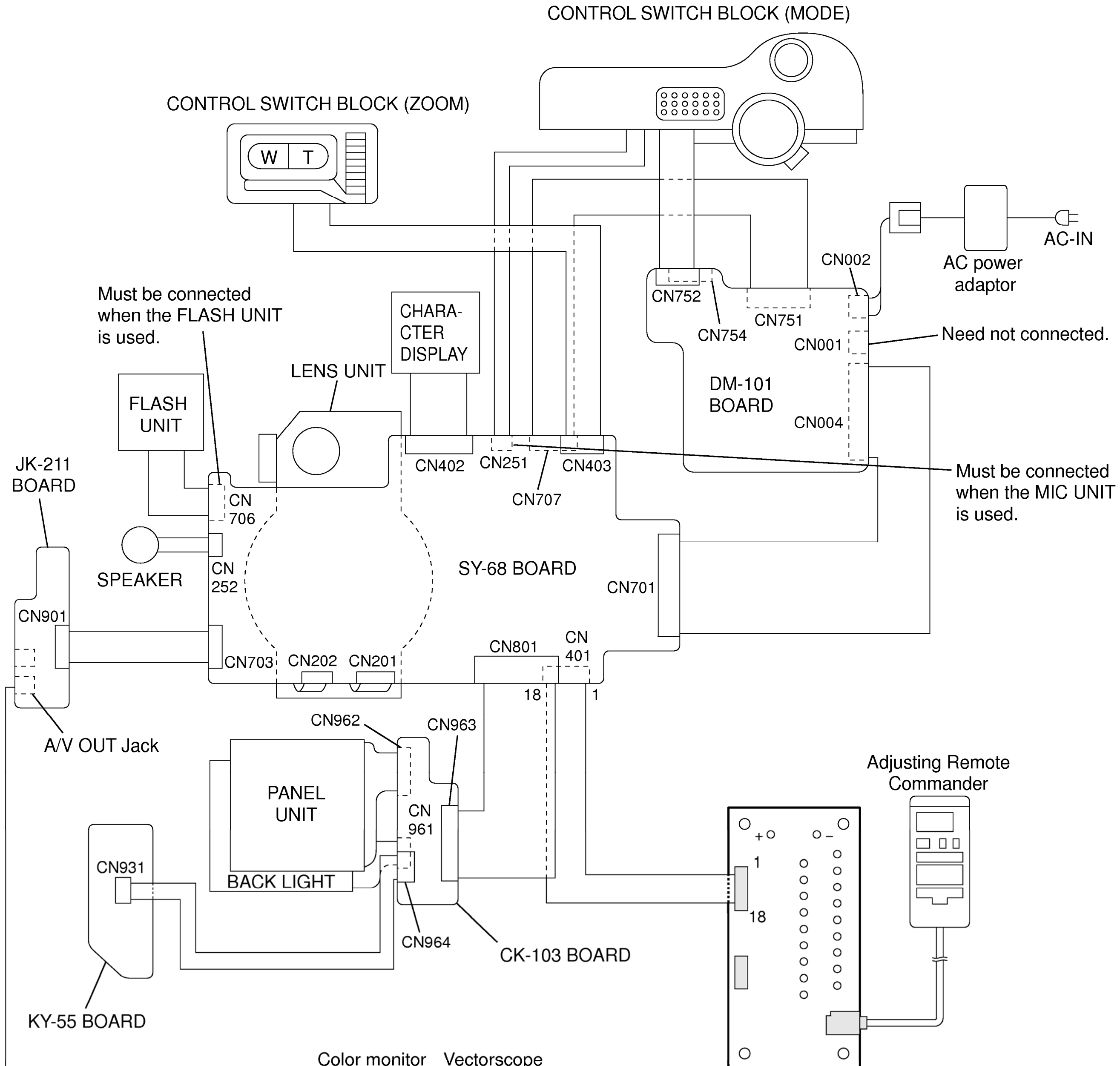


Fig. 5-1-5


CONTROL SWITCH BLOCK (MODE)
CONTROL SWITCH BLOCK (ZOOM)
W
T
AC-IN
CN002
AC power adaptor
Must be connected when the FLASH UNIT is used.
CHARA-CTER DISPLAY
CN752
CN751
CN754
CN001
Need not connected.
LENS UNIT
DM-101 BOARD
FLASH UNIT
CN004
JK-211 BOARD
CN402
CN251
CN403
Must be connected when the MIC UNIT is used.
CN 706
CN707
SPEAKER
CN 252
SY-68 BOARD
CN701
CN901
CN703
CN202
CN201
CN801
CN 401
18
1
A/V OUT Jack
CN962
CN963
Adjusting Remote Commander
PANEL UNIT
CN 961
CN931
BACK LIGHT
+
–
1
18
CN964
CK-103 BOARD
KY-55 BOARD
Color monitor
Vectorscope
Video (yellow)
Terminated 75 Ω
CPC-9 jig (Note 1, 2) (J-6082-393-C)
Audio (black)

Note 1: Don t use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

Fig. 5-1-6

1-1-4. Precautions

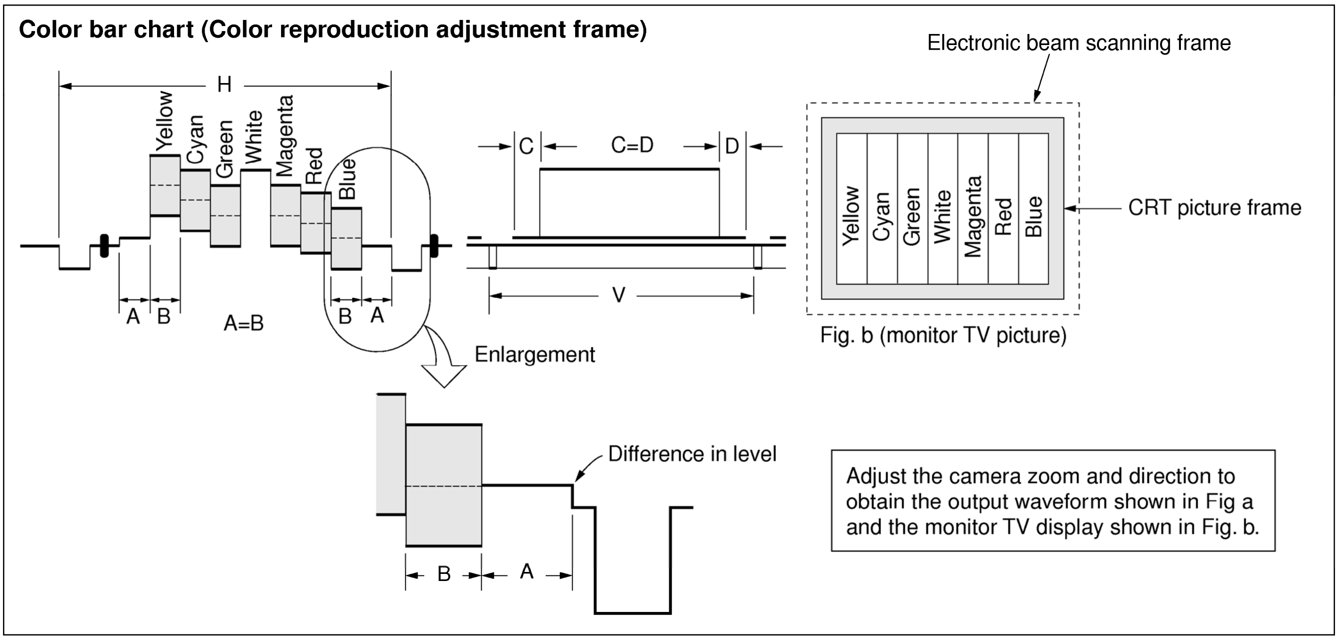
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. PLAY/CAMERA/MOVIE switch
   (Mode Dial) .... CAMERA
2. FOCUS switch
   (KY-55 board S935) .... MF (MANUAL FOCUS)
3. EXPOSURE button (KY-55 board S934)   0EV
4. DSPL/LCD ON/OFF button
   (KY-55 board S932) .... OSD OFF
5. WB (WHITE BALANCE)
   (Menu display) .... AUTO
6. P.EFFECT (Menu display) .... OFF
7. DEMO (Menu display) .... OFF
8. VIDEO OUT (Menu display) .... NTSC

2. Order of Adjustments

Basically carry out adjustments in the order given.


Color bar chart (Color reproduction adjustment frame)
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
Enlargement
C
C=D
D
V
Electronic beam scanning frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
Fig. b (monitor TV picture)
Difference in level
B
A

Adjust the camera zoom and direction to obtain the output waveform shown in Fig a and the monitor TV display shown in Fig. b.

Fig. 5-1-7

3. Subjects

1) Color bar chart (Standard picture frame).
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-7. (Standard picture frame)
2) Clear chart (Standard picture frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time)
3) Chart for flange back adjustment
   Join together a piece of white A0 size paper (1189mm × 841 mm) and a piece of black paper to make the chart shown in Fig. 5-1-8.

Note: Use a non-reflecting and non-glazing vellum paper. The size must be A0 or larger and the joint between the white and black paper must not have any undulations.

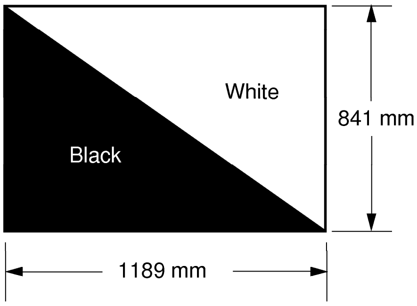

White
Black
841 mm
1189 mm

Fig. 5-1-8

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate flash adjustment. If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

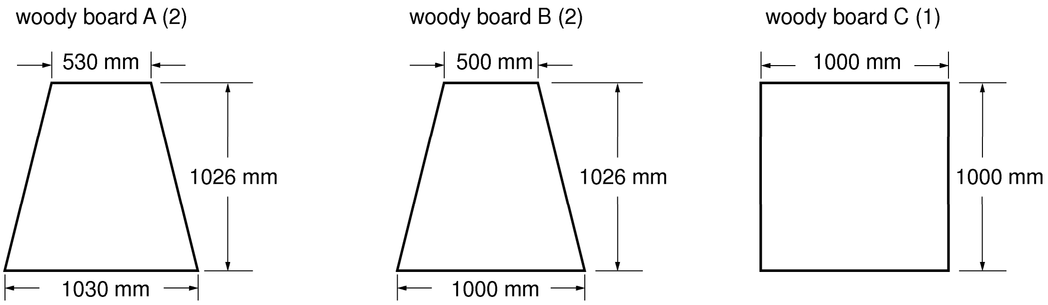

woody board A (2)
530 mm
1026 mm
1030 mm
woody board B (2)
500 mm
1026 mm
1000 mm
woody board C (1)
1000 mm
1000 mm

Fig. 5-1-9

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig 5-1-10)

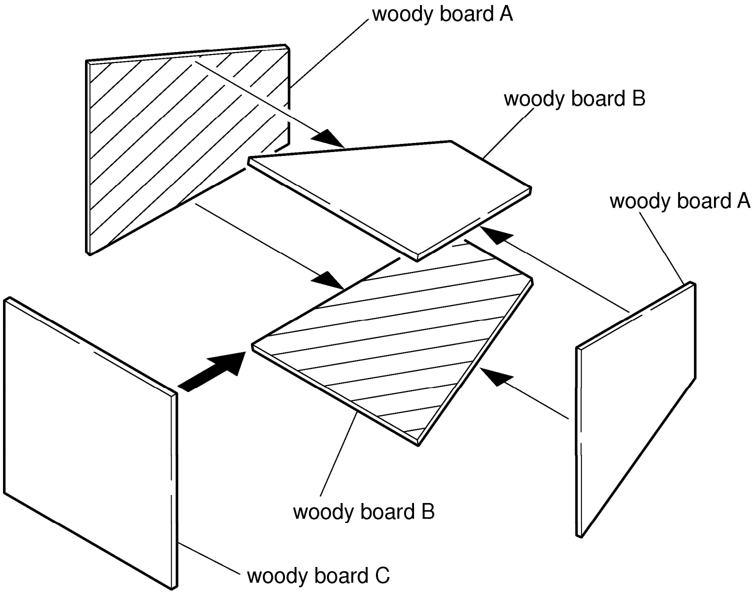

woody board A
woody board B
woody board A
woody board B
woody board C

Fig. 5-1-10

1-2. INITIALIZATION OF B, D, E, F, 7, 9 PAGE DATA

1-2-1. Initialization of D Page Data

1. Initializing D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) LCD system adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	03	0B	
3	4	00	2D	
4	4	01	2D	Press PAUSE button.
5	4	02		Check the data changes to “01”.
6				Perform “Modification of D page Data”.

2. Modification of D Page Data

If the D page data has been initialized, change the data of the “Fixed data-2” address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page Data:

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. D Page Table

Note 1: Fixed data-1: Initialized data.
(Refer to “1. Initializing of D Page Data”)
Note 2: Fixed data-2: Modified data.
(Refer to “2. Modification of D Page Data”)

Address	Initial value	Remark
10	00	Test mode
11 to 4E		Fixed data-1 (Initialized data)
4F		Fixed data-2
50 to C5		Fixed data-1 (Initialized data)
C6	5A	Video sync level adj.
C7	61	Video burst level adj.
C8 to CF		Fixed data-1 (Initialized data)
D0	AD	Bright adj.
D1	7E	Color adj.
D2	99	White balance adj.
D3	75	
D4	B7	Contrast adj.
D5	3C	D range adj.
D6	6E	V-COM level adj.
D7	93	VCO adj. (NTSC)
D8	61	V-COM adj.
D9 to DC		Fixed data-1 (Initialized data)
DD	6F	VCO adj. (PAL)
DE		Fixed data-2
DF to EF		Fixed data-1 (Initialized data)

1-2-2. Initialization of B, E, F, 7, 9 Page Data

1. Initializing B, E, F, 7, 9 Page Data

Note: If the B, E, F, 7, 9 Page data has been initialized, "Modification of B, E, F, 7, 9 Page Data" and following adjustments need to be performed again.

1) Modification of B, E, F, 7, 9 page data
2) Video system adjustments
3) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	7
Adjusting Address	00 to FF
Adjusting page	9
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	03	0B	
3	6	00	2D	
4	6	01	2D	Press PAUSE button.
5	6	02		Check the data changes to "01".
6				Perform "Modification of B, E, F, 7, 9 page Data".

2. Modification of B, E, F, 7, 9 Page Data

If the B, E, F, 7, 9 Page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of B, E, F, 7, 9 Page data

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. B Page Table

Note 1: Fixed data-1: Initialized data.
(Refer to "1. Initializing B, E, F, 7, 9 Page Data")

Note 2: Fixed data-2: Modified data.
(Refer to "2. Modification of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
00 to FF	Fixed data-1 (Initialized data)	

4. E Page Table

Note 1: Fixed data-1: Initialized data.
(Refer to "1. Initializing B, E, F, 7, 9 Page Data")

Note 2: Fixed data-2: Modified data.
(Refer to "2. Modification of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
00 to FF	Fixed data-1 (Initialized data)	

5. F Page Table

Note 1: Fixed data-1: Initialized data. (Refer to “1.Initializing of B, E, F, 7, 9 Page Data”)
Note 2: Fixed data-2: Modified data. (Refer to “2.Modification of B, E, F, 7, 9 Page Data”)

Address	Initial value	Remark
10 to 13		Fixed data-1 (Initialized data)
14	33	Flange back adj.
15	48	
16	DA	
17	DF	
18	13	
19	C0	
1A	00	
1B	00	
1C	00	
1D	00	
1E	00	
1F	00	
20	20	
21	20	
22	BA	
23	46	
24	0A	
25	00	
26	85	Light level adj.
27	B0	
28	94	
29	00	F No. standard data input
2A	00	
2B	00	
2C	00	
2D	00	
2E to 39		Fixed data-1 (Initialized data)
3A	2F	Auto white balance standard data input
3B	37	
3C	40	
3D	D0	
3E		Fixed data-1 (Initialized data)
3F	B5	Auto white balance adj.
40	43	
41	03	Color reproduction adj.
42	E9	
43	63	
44	83	
45	D5	
46	FE	
47	73	
48	45	
49 to 4C		Fixed data-1 (Initialized data)
4D	28	Strobe white balance adj.
4E	6E	
4F to 58		Fixed data-1 (Initialized data)

Address	Initial value	Remark
59	00	Auto white balance standard data input
5A	14	Mechanical shutter adj.
5B		Fixed data-1 (Initialized data)
5C	63	Color reproduction adj.
5D	83	
5E	03	
5F	E9	
60 to 63		Fixed data-1 (Initialized data)
64	10	Strobe white balance adj.
65 to 68		Fixed data-1 (Initialized data)
69	00	Strobe white balance adj.
6A	C0	
6B	B4	
6C	10	Mechanical shutter adj.
6D	05	
6E	09	
6F	B5	
70	07	
71	C4	
72	07	
73	48	
74	06	
75	CB	
76	01	
77	01	
78	01	
79	01	
7A	01	
7B	2C	
7C	3A	
7D	2E	
7E	2D	
7F	2D	
80	00	Auto white balance adj.
81 to 86		Fixed data-1 (Initialized data)
87	FF	Flange back adj.
88	00	
89	00	
8A	00	
8B	00	
8C	00	
8D	00	
8E	00	
8F	00	
90	00	
91	00	
92	00	

Address	Initial value	Remark
93	00	Flange back adj.
94	00	
95	00	
96	00	
97	00	
98	00	
99	00	
9A	00	
9B	00	
9C to 9F		Fixed data-1 (Initialized data)
A0	00	Mixed color cancel adj.
A1	00	
A2	00	
A3	00	
A4 to A8		Fixed data-1 (Initialized data)
A9	0F	Auto white balance adj.
AA	05	
AB to D3		Fixed data-1 (Initialized data)
D4	80	Mechanical shutter adj.
D5	8A	
D6	8A	
D7	8A	
D8	8A	
D9 to FF		Fixed data-1 (Initialized data)

6. 7 Page Table

Note 1: Fixed data-1: Initialized data. (Refer to “1. Initializing B, E, F, 7, 9 Page Data”)
Note 2: Fixed data-2: Modified data. (Refer to “2. Modification of B, E, F, 7, 9 Page Data”)

Address	Initial value	Remark
00 to 5F	Fixed data-1 (Initialized data)	
60	0F	CCD black defect compensation
61	FF	
62	0F	
63	FF	
64	0F	
65	FF	
66	0F	
67	FF	
68	0F	
69	FF	
6A	0F	
6B	FF	
6C	0F	
6D	FF	
6E	0F	
6F	FF	
70	0F	
71	FF	
72	0F	
73	FF	
74	0F	
75	FF	
76	0F	
77	FF	
78	0F	
79	FF	
7A	0F	
7B	FF	
7C	0F	
7D	FF	
7E	0F	
7F	FF	
80	0F	
81	FF	
82	0F	
83	FF	
84	0F	
85	FF	
86	0F	
87	FF	
88	0F	CCD white defect compensation
89	FF	
8A	0F	
8B	FF	
8C	0F	
8D	FF	
8E	0F	CCD white defect compensation
8F	FF	
90	0F	
91	FF	
92	0F	
93	FF	
94	0F	
95	FF	
96	0F	
97	FF	
98	0F	
99	FF	
9A	0F	
9B	FF	
9C	0F	
9D	FF	
9E	0F	
9F	FF	
A0	0F	
A1	FF	
A2	0F	
A3	FF	
A4 to FF	Fixed data-1 (Initialized data)	

7. 9 Page Table

Note 1: Fixed data-1: Initialized data.
(Refer to “1. Initializing B, E, F, 7, 9 Page Data”)
Note 2: Fixed data-2: Modified data.
(Refer to “2. Modification of B, E, F, 7, 9 Page Data”)

Address	Initial value	Remark
00 to FF	Fixed data-1 (Initialized data)	

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Sync Level Adjustment

Adjust the sync level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C6
Specified Value	A = 286 ± 5 mVp-p (NTSC) A = 300 ± 5 mVp-p (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
3	D	C6		Change the data and set the sync level (A) to the specified value.
4	D	C6		Press PAUSE button

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

2. Video Burst Level Adjustment

Adjust the burst level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C7
Specified Value	A = 286 ± 5 mVp-p (NTSC) A = 300 ± 5 mVp-p (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
3	D	C7		Change the data and set the burst level (A) to the specified value.
4	D	C7		Press PAUSE button

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

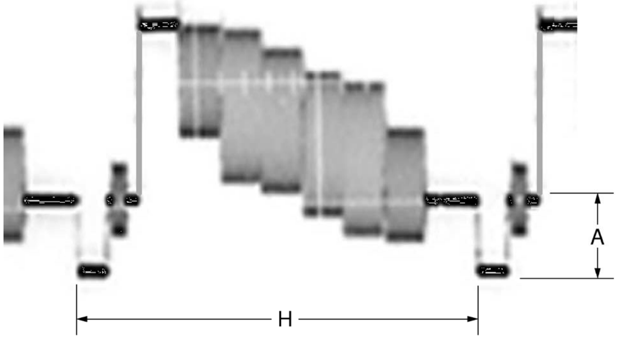


Fig. 5-1-11

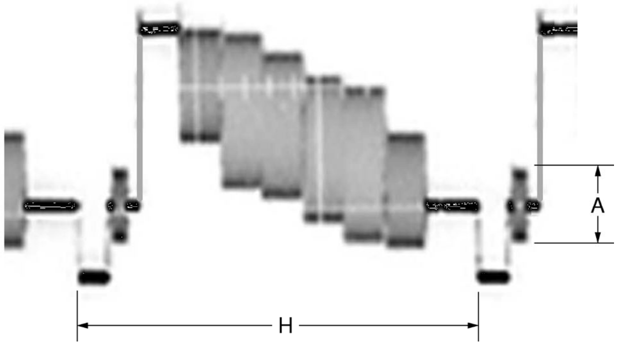


Fig. 5-1-12

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

Note: For "CAMERA SYSTEM ADJUSTMENTS", perform in order of item numbers.

Data setting during camera system adjustments

Perform the following data setting before the camera system adjustments.

Menu setting:

1) VIDEO OUT of SET UP menu................ NTSC (NTSC mode)
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL")

Data setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	D	10	80	Press PAUSE button.
3	2	10		Check the bit values of bit3, bit4 and bit5 are "1". (Note 1, 2)
4	D	11	40	Press PAUSE button.
5	D	10	81	Press PAUSE button.
5	6	C1		Check the data changes to "02".
6	4	06	01	
7	6	6C	01	
8				Wait for 1 second.
9	B	75	00	Press PAUSE button.

Note 1: For the bit values, refer to "5-2. SERVICE MODE", "2-3. 2. Bit value discrimination".

Note 2: In case of wrong data, select page: 2, address: 0A and set data: 02.
Set the adjusting remote commander to normal rank, and the power will be turned off and on automatically. Wait for 0.167 second after the power on, and set the adjusting remote commander to the service rank. Then, retry from the step 1.

Note 3: Repeat the "Data setting method", if the power was turned off and on during the "CAMERA SYSTEM ADJUSTMENTS".

After completing the camera system adjustments, release the data setting:

Order	Page	Address	Data	Procedure
1	4	06	00	
2	6	6C	00	
3	B	75	10	Press PAUSE button.
4	D	11	00	Press PAUSE button.
5	D	10	00	Press PAUSE button.
6	0	01	00	

1. Flange Back Adjustment (Using the minipattern box)

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA
Subject	Siemens star chart with ND filter for minipattern box (Note 1)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25, 87 to 9B

Note 1: Dark Siemens star chart.
Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Preparations before adjustments:

1) The minipattern box is installed as shown in the following figure.
   Note 3: The attachment lenses are not used.
   Note 4: Take care not to hit the mini-pattern box when extending the lens.
2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
6) Check that the data on page: F, address: 14 to 25 and 87 to 9B are initial value (See table below).

Address	Data	Address	Data	Address	Data
14	33	21	20	8F	00
15	48	22	BA	90	00
16	DA	23	46	91	00
17	DF	24	0A	92	00
18	13	25	00	93	00
19	C0	87	FF	94	00
1A	00	88	00	95	00
1B	00	89	00	96	00
1C	00	8A	00	97	00
1D	00	8B	00	98	00
1E	00	8C	00	99	00
1F	00	8D	00	9A	00
20	20	8E	00	9B	00

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

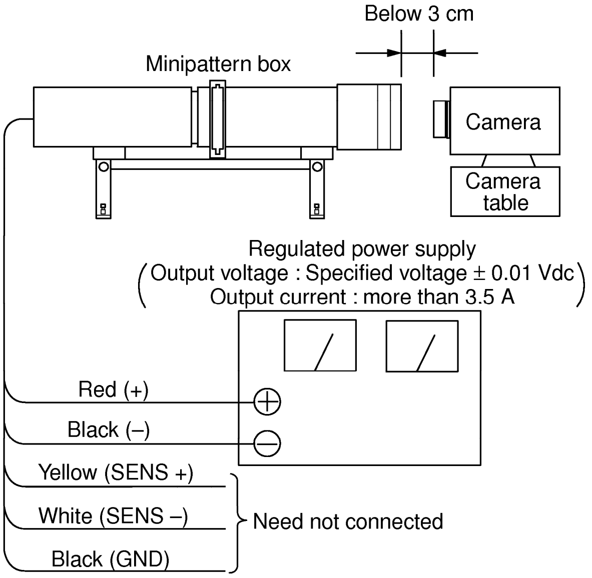


Fig. 5-1-13

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	01	13	Press PAUSE button.
4	6	01	27	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to "01".
6	F	87		Check the data changes to "00".

Note 5: The adjustment data will be automatically input to page: F, address: 14 to 25 and 87 to 9B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-14)
3	0	01	00	
4				Perform"Flange Back Check".

2. Flange Back Adjustment
(Using the flange back adjustment chart)

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA
Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 300 to 400 lux)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25, 87 to 9B

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Preparations before adjustments:

1) Place the Flange back adjustment chart 2.0 m from the front of the lens.
2) Check that the center of Flange back adjustment chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
3) Check that the data on page: F, address: 14 to 25 and 87 to 9B are initial value (See table below).

Address	Data	Address	Data	Address	Data
14	33	21	20	8F	00
15	48	22	BA	90	00
16	DA	23	46	91	00
17	DF	24	0A	92	00
18	13	25	00	93	00
19	C0	87	FF	94	00
1A	00	88	00	95	00
1B	00	89	00	96	00
1C	00	8A	00	97	00
1D	00	8B	00	98	00
1E	00	8C	00	99	00
1F	00	8D	00	9A	00
20	20	8E	00	9B	00

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	01	13	Press PAUSE button.
4	6	01	15	Press PAUSE button. (Note 2)
5	6	02		Check the data changes to "01".
6	F	87		Check the data changes to "00".

Note 2: The adjustment data will be automatically input to page: F, address: 14 to 25 and 87 to 9B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-14)
3	0	01	00	
4				Perform"Flange Back Check".

3. Flange Back Check

Mode	CAMERA
Subject	Siemens star chart (1.0 m from the front of the lens) (Luminance: 200 to 400 lux)
Measurement Point	Check operation on the LCD screen
Measuring Instrument	
Specified value	Focused at the TELE end and WIDE end

Checking method:

Order	Page	Address	Data	Procedure
1				Place the Siemens star 1.0 m from the front of the lens. To open the IRIS , decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
2	0	01	01	
3				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
4				Shoot the Siemens star chart with the zoom TELE end. At this time, the center of Siemens star chart should be in the center of the LCD screen.
5				Check that the lens is focused.
6	6	2C	01	
7				While observe the LCD screen, change the zoom to the WIDE end and check that the lens is focused.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	2C	00	
2				Release the data setting performed at step 3. (Refer to page 5-14)
3	0	01	00	

4. Picture Frame Setting

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note 1: Displayed data of the page 1 of adjusting remote commander.

1:XX:XX
YL data (second XX)
YH data (first XX)

Switch setting:
1) FOCUS .... AF (AUTO FOCUS)

Setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3				Shoot the color bar chart with the zoom WIDE end.
4				Enter the output of VIDEO OUT to the TV monitor, and move to the position as shown in Fig. 5-1-16.
5				Horizontal width of one color (B, C) and that of black (A, D) on the color bar chart should be same. (See Fig. 5-1-14)
6				With vertical width of black (E, F) set in same, the color bar chart should come to the center of TV monitor. (See Fig. 5-1-15)
7				Check that the color bar on the TV monitor is focused.
8	0	03	22	
9	1			Note down the YH and YL data. (Note 1)

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2				Release the data setting performed at step 2 . (Refer to page 5-14)
3	0	01	00	

How to reset the zoom and focus when they deviated:

Order	Page	Address	Data	Procedure
1	6	2C	01	
2	6	90	00	
3	6	91	00	
4	6	92	YL	(Note 2)
5	6	93	YH	(Note 2)
6	6	01	79	Press PAUSE button.
7	6	07		Check the data changes to “01”.
8	6	01	00	Press PAUSE button.

Note 2: The data noted down at step 9 of “Setting method”.

Check on the oscilloscope

1. Horizontal period

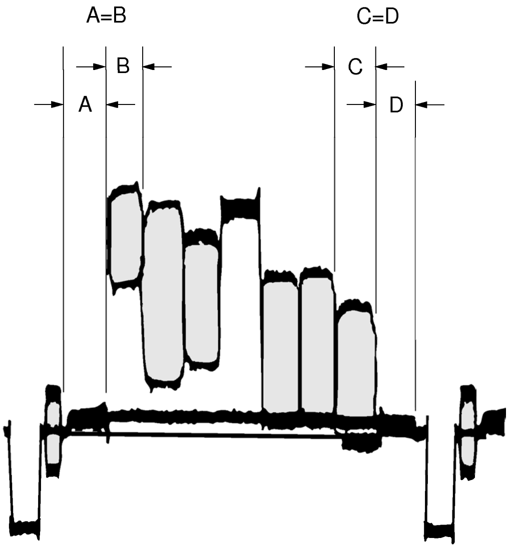


Fig. 5-1-14

2. Vertical period

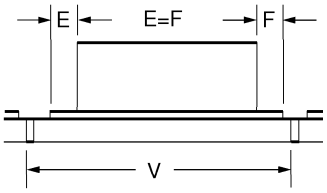


Fig. 5-1-15

Check on the TV monitor

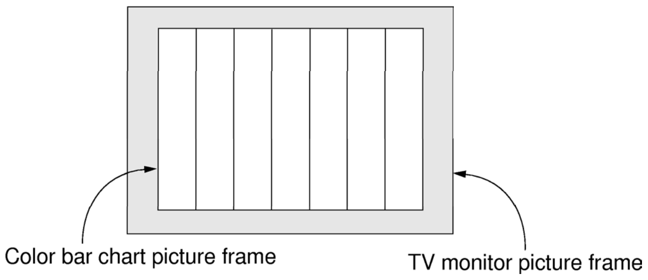


Fig. 5-1-16

5. F No. Standard Data Input

Compensate the unevenness of the iris meter sensitivity.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	29 to 2D

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	BB	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: 29 to 2D.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

6. Mechanical Shutter Adjustment

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	5A, 6C to 7F, D4 to D8

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	AD	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".
13	6	AB		Check the data changes to "00".

Note 3: The adjustment data will be automatically input to page: F, address: 5A, 6C to 7F and D4 to D8.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

7. Light Level Adjustment

Adjust the standard LV value.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Displayed data of page: 1 (Note 3)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	26 to 28
Specified Value	AE level: 0FC0 to 1040

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
└── Displayed data

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	0D	Press PAUSE button. (Note 4)
12	6	02		Check the data changes to "01".
13	0	03	06	
14	1			Check that the displayed data (Note 3) satisfies the AE level specified value.

Note 4: The adjustment data will be automatically input to page: F, address: 26 and 28.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed atstep 2 . (Refer to page 5-14)
7	0	01	00	

8. Mixed Color Cancel Adjustment

To perform mixed color cancel adjustment based on data of each color in color bar.

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	A0 to A3

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	D7	Press PAUSE button.
12	6	01	D5	Press PAUSE button. (Note 3)
13	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: A0 to A3.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

9. Auto White Balance Standard Data Input

Adjust the white balance standard data at 3200K.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	3A to 3D, 59

Note 1: Check that the data of page: 6, address: 02 is “00”.
If not, turn the power of unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Note 3: “Auto White Balance Standard Data Input” is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	01	11	Press PAUSE button.
12	6	01	0B	Press PAUSE button. (Note 4)
13	6	02		Check the data changes to “01”.

Note 4: The adjustment data will be automatically input to page: F, address: 3A to 3D and 59.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	

10. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Filter	Filter C14 for color temperature correction
Measurement Point	Displayed data of page: 1 (Note 3)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	3F, 40, 80, A9, AA
Specified Value	R ratio: 2720 to 2860 B ratio: 6060 to 61A0

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
Displayed data

Note 4: "Auto White Balance Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	00	
7	6	92	YL	(Note 2)
8	6	93	YH	(Note 2)
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
12	6	01	A7	Press PAUSE button.
13	F	49 4A 4B 4C		Note down the data.
14	F	49 4A 4B 4C	27 C0 61 00	Press PAUSE button.
15	6	01	A5	Press PAUSE button. (Note 5)
16	6	02		Check the data changes to "01".
17	6	01	3F	Press PAUSE button.
18	0	03	04	
19	1			Check that the displayed data (Note 3) satisfies the R ratio specified value.
20	0	03	05	
21	1			Check that the displayed data (Note 3) satisfies the B ratio specified value.

Note 5: The adjustment data will be automatically input to page: F, address: 3A, 40, 80, A9 and AA.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6	F	49 4A 4B 4C		Set the data noted down at step 13, and press PAUSE button.
7				Release the data setting performed at step 3 . (Refer to page 5-14)
8	0	01	00	
9				Remove the C14 filter on the lens.

11. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	41 to 48, 5C to 5F

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: "Color Reproduction Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	AB	Press PAUSE button.
12	6	12	80	
13				Wait for 1 second.
14	6	12	00	
15				Wait for 2 seconds.
16	6	01	A9	Press PAUSE button. (Note 4)
17	6	02		Check the data changes to "01".

Note 4: The adjustment data will be automatically input to page: F, address: 41 to 48 and 5C to 5F.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2 . (Refer to page 5-14)
6	0	01	00	
7				Perform "Color Reproduction Check".

12. Color Reproduction Check

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Vectorscope
Specified Value	All color luminance points should settle within each color reproduction frame.

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Note 2: Refer to “Picture Frame Setting” for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	00	Press PAUSE button.
11	6	10	01	
12	E	52		Note down the data.
13	E	52	09	Press PAUSE button.
14	6	01	0F	Press PAUSE button.
15	6	12	80	
16				Wait for 1 second.
17	6	12	00	
18				Wait for 2 seconds.
19				Check the each color luminance point is each color reproduction frame.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	10	00	
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6	E	52		Set the data noted down at step 12, and press PAUSE button.
7				Release the data setting performed at step 2 . (Refer to page 5-14)
8	0	01	00	

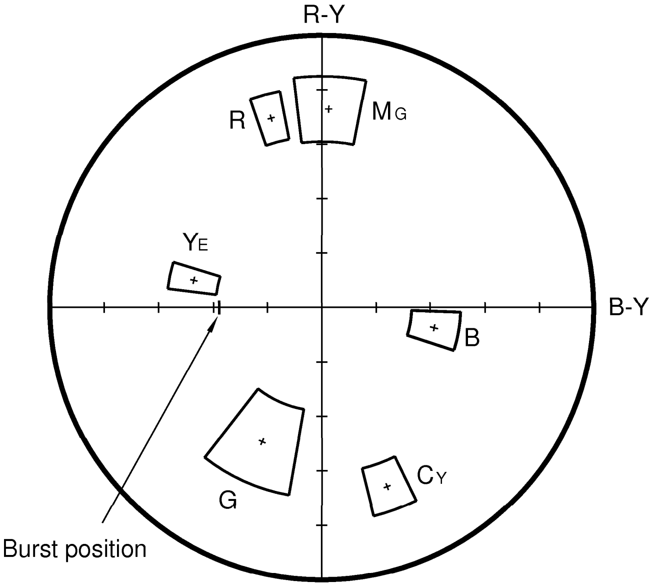


Fig. 5-1-17

13. Auto White Balance Check

Mode	CAMERA	
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)	
Measurement Point	Displayed data of of Page: 1 (Note 3)	Video terminal A/V OUT jack (75 Ω terminated)
Measuring Instrument	Adjusting remote commander	Vectorscope
Specified Value	R ratio: 3E00 to 4200 B ratio: 3E00 to 4200	Fig. 5-1-19 (A) and (B)

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: Refer to "Picture Frame Setting" for YH and YL.

Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
└── Displayed data

Checking method:

Order	Page	Address	Data	Procedure
1				Check that the lens is not covered with either filter.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	00	
7	6	92	YL	(Note 2)
8	6	93	YH	(Note 2)
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
INDOOR data check (without ND filter)				
12	E	52		Note down the data.
13	E	52	0E	Press PAUSE button.
14	6	01	0F	Press PAUSE button.
15	0	03	04	
16	1			Check that the displayed data (Note 3) satisfied the R ratio specified value.
17	0	03	05	
18	1			Check that the displayed data (Note 3) satisfied the R ratio specified value.
INDOOR luminance point check				
19				Check that the center of the white luminance point within the circle shown Fig. 5-1-18 (A).
OUTDOOR luminance check				
20				Place the C14 filter on the lens.
21	E	4B		Note down the data.
22	E	4B	20	Press PAUSE button.
23	6	01	3F	Press PAUSE button.
24				Check that the center of the white luminance point settles in the circle shown Fig. 5-1-18 (B).

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5	E	4B		Set the data noted down at step 21, and press PAUSE button.
6	E	52		Set the data noted down at step 12, and press PAUSE button.
7				Release the data setting performed at step 3 . (Refer to page 5-14)
8	0	01	00	
9				Remove the C14 filter on the lens.

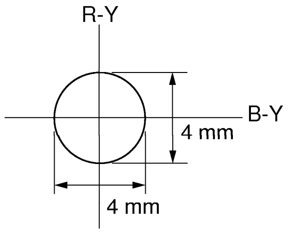


Fig. 5-1-18 (A)

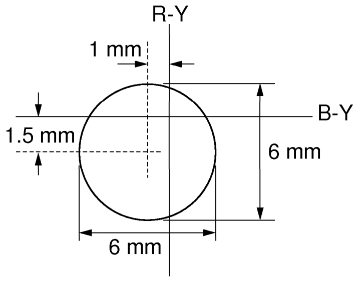


Fig. 5-1-18 (B)

14. CCD White Defect Compensation

Mode	CAMERA
Subject	Not required
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	88 to A3

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of unit OFF/ON.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	F	DE		Note down the data.
4	F	DF	1E	Press PAUSE button.
5	F	E3		Note down the data.
6	F	E3	0E	Press PAUSE button.
7	6	01	8B	Press PAUSE button. (Note 2)
8	6	02		Check the data changes to “01”.
9	6	55		Check the data. 00 to 7F: Normal 80 to FF: Defective
10	6	01	00	Press PAUSE button.
11	F	DE	0F	Press PAUSE button.
12	F	E3	60	Press PAUSE button.
13	6	01	87	Press PAUSE button.
14	6	02		Check the data changes to “01”.
15	6	55		Check the data changes to “00”.

Note 2: The adjustment data will be automatically input to page: 7, address: 88 to A3.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	F	E3		Set the data noted down at step 5, and press PAUSE button.
3	F	DE		Set the data noted down at step 3, and press PAUSE button.
4				Release the data setting performed at step 2 . (Refer to page 5-14)
5	0	01	00	

15. CCD Black Defect Compensation

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	60 to 87

Note 1: Check that the data of page: 6, address: 02 is “00”.
If not, turn the power of unit OFF/ON.

Note 2: Check that there are no dust, no dirt and reflection of the clear chart.

Note 3: Any subject other than the clear chart should be in the screen.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	F	DF		Note down the data.
4	F	DF	4C	Press PAUSE button.
5	6	2C	01	
6	6	90	00	
7	6	91	03	
8	6	92	00	
9	6	93	00	
10	6	01	79	Press PAUSE button.
11	6	30	01	
12	6	07		Check the data changes to “01”.
13	6	01	8D	Press PAUSE button. (Note 4)
14	6	02		Check the data changes to “01”.
15	6	55		Check the data. 00 to 0A: Normal 0B to FF: Defective
16	6	01	00	Press PAUSE button.
17	F	DF	5A	Press PAUSE button.
18	6	01	89	Press PAUSE button.
19	6	02		Check the data changes to “01”.
20	6	55		Check the data changes to “00”.

Note 4: The adjustment data will be automatically input to page: 7, address: 60 to 87.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	30	00	
4	6	91	00	
5	F	DF		Set the data noted down at step 3, and press PAUSE button.
6				Release the data setting performed at step 2 . (Refer to page 5-14)
7	0	01	00	

16. Strobe White Balance Adjustment

Adjust the white balance when the strobe light flashed.

Mode	CAMERA
Subject	Flash adjustment box (Note 3) (1.0 m from the front of the lens)
Adjustment Page	F
Adjustment Address	4D, 4E, 64, 69 to 6B
Specified Value	Y level data: 60 to 94 (Note 4) R-Y level data: FA to FF or 00 to 06 (Note 5) B-Y level data: FA to FF or 00 to 06 (Note 5)

Note 1: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of unit OFF/ON.

Note 2: Perform this adjustment in the Flash adjustment box.

Note 3: Refer to “4. Preparing the Flash adjustment box”. (See page 5-7)

Note 4: Displayed data of page: F, address: 64, of the adjusting remote commander.

F:XX:64
Y level data

Note 5: The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
B-Y level data
R-Y level data

Note 6: “Strobe White Balance Adjustment” is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Switch setting:

1) FLASH .... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform “Data setting during camera system adjustments”. (Refer to page 5-14)
3	6	90	00	
4	6	91	00	
5	6	92	FF	
6	6	93	FF	
7	6	2C	01	
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to “01”.
10	6	01	67	Press PAUSE button.
11				Check the flashing of strobe light.
12	6	02		Check the data changes to “01”.
13	6	01	00	Press PAUSE button.
14	6	01	67	Press PAUSE button.
15				Check the flashing of strobe light.
16	6	02		Check the data changes to “01”.
17	6	01	00	Press PAUSE button.
18	6	01	B9	Press PAUSE button. (Note 7)
19				Check the flashing of strobe light.
20	6	02		Check the data changes to “01”.
21	6	01	00	Press PAUSE button.
22	6	01	67	Press PAUSE button.
23				Check the flashing of strobe light.
24	6	02		Check the data changes to “01”.
25	F	64		Check that the data satisfies the Y level data satisfied value. (Note 4)
26	0	03	02	
27	1			Check the R-Y and B-Y level data (Note 5) satisfies the specified value.

Note 7: The adjustment data will be automatically input to page: F, address: 4D, 4E, 64 and 69 to 6B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed at step 2 . (Refer to page 5-14)
7	0	01	00	

1-5. LCD SYSTEM ADJUSTMENTS

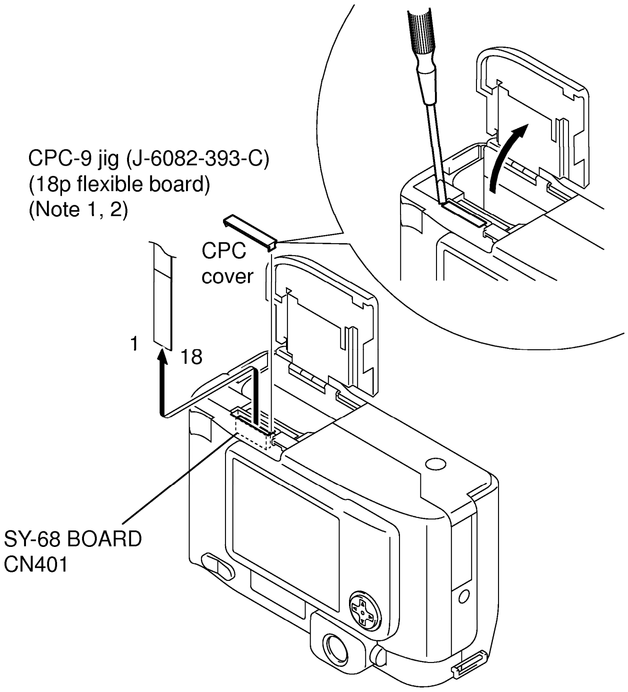
Before perform the LCD system adjustments, check that the specified values of “VIDEO SYSTEM ADJUSTMENTS” are satisfied.

Note 1: The back light (fluorescent tube) is driven with high voltage AC power. Therefore, do not touch the back light directly, otherwise you will feel an electric shock.
Note 2: Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
Note 3: Set the LCD BRIGHT (Menu display) to the center.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN401 of the SY-68 board.
Connect the Measuring Instruments via the CPC-9 jig (J-6082-393-C).
The following table shows the Pin No. and signal name of CN401.

Pin No.	Signal Name	Pin No.	Signal Name
1	BL-L1	10	HI_UNREG
2	N.C.	11	LANC_IN
3	N.C	12	LANC_OUT
4	REG_GND	13	N.C.
5	N. C.	14	N.C.
6	BL_L2	15	N.C.
7	HSY	16	N.C.
8	PANEL_COM	17	N.C.
9	VG	18	N.C



Note 1: Don t use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

Fig. 5-1-19

1. LCD Initial Data Input (1)

Mode	PLAY
Signal	Arbitrary
Adjustment Page	C
Adjustment Address	3A to 3F

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, and enter the data given in the following table.

Note: Press the PAUSE button each time the data are set, as the data are written to non-volatile memory (EEPROM).

Address	Data	Remark
3A	59	Fixed data
3B	00	
3C	04	
3D	5B	
3E	00	
3F	02	

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.

2. LCD Initial Data Input (2)

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	CE to D9, DC to DF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and enter the data given in the following table.

Note: Press the PAUSE button each time the data are set, as the data are written to non-volatile memory (EEPROM).

Address	Data	Remark
CE	A2	Fixed value
CF	B7	
D0	AD	Bright adjustment
D1	7E	Color adjustment
D2	99	White blance adjustment
D3	75	
D4	B7	Contrast adjustment
D5	3C	D range adjustment
D6	6E	V-COM level adjustment
D7	93	VCO adjustment (NTSC)
D8	61	V-COM adjustment
D9	97	Fixed value
DC	46	
DD	6F	VCO adjustment (PAL)
DE	C6	Fixed value
DF	B7	

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.

3. VCO Adjustment (SY-68 Board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑦ of CN401 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	D
Specified Value	D7 (NTSC) DD (PAL)
Specified Value	f = 15734 ± 30 Hz (NTSC) f = 16175 ± 30 Hz (PAL)

Menu setting:

1) VIDEO OUT of SET UP menu................ NTSC (NTSC mode) (This adjustment must be performed in NTSC mode, so don't set the menu setting to “PAL”)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	5	F0	01	
3	D	D7		Change the data and set the frequency (f) to the NTSC specified value.
4	D	D7		Press PAUSE button.
4	D	DD		Change the data and set the frequency (f) to the PAL specified value.
5	D	DD		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	5	F0	00	
2	0	01	00	

4. D Range Adjustment (SY-68 Board)

Set the D range of the LCD driver to the specified value.
If deviated, the LCD screen will became blackish or saturated (whitish)

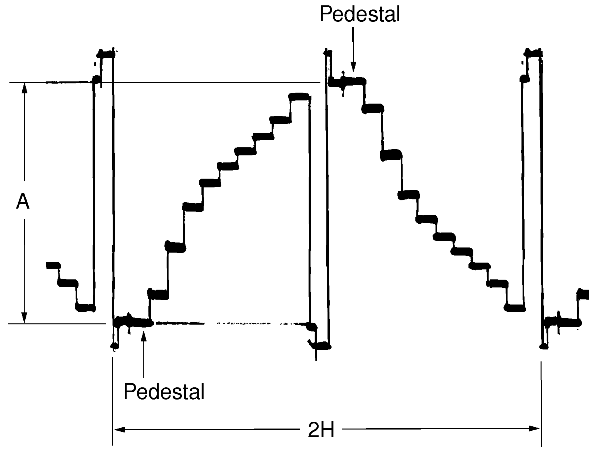
Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN401 (VG) External trigger: Pin ⑧ of CN401 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D5
Specified Value	A = 2.52 ± 0.05 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	03	
3	D	D5		Change the data and set the voltage (A) to the specified value.
4	D	D5		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	



A: Pedestal level difference between 1H period and previous 1H period.

Fig. 5-1-20

5. Bright Adjustment (SY-68 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value.
If deviated, the LCD screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN401 (VG) External trigger: Pin ⑧ of CN401 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D0
Specified Value	A = 1.32 ± 0.05 Vp-p

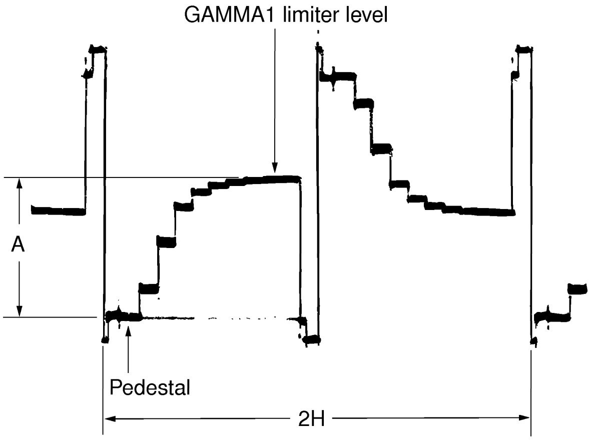
Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	10	01	
3	4	F1	03	
4	D	D0		Change the data and set the voltage (A) to the specified value.
5	D	D0		Press PAUSE button.
6	D	D0		Read the data and this data is named Dref.
7				Convert Dref to decimal notation, and obtain Dref’. (Note)
8				Calculate DCE’ and DDE’ using following equations. (decimal calculation) DCE’ = Dref’ − 11 DDE’ = Dref’ + 24
9				Convert DCE’ and DDE’ to hexadecimal numbers, and obtain DCE and DDE. (Note)
10	D	CE	DCE	Press PAUSE button.
11	D	DE	DDE	Press PAUSE button.

Note: Refer to table 5-2-2. “Hexadecimal-decimal conversion table”.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	4	10	00	
3	0	01	00	



A: Between the pedestal and GAMMA1 limiter level

Fig. 5-1-21

6. Contrast Adjustment (SY-68 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value.
If deviated, the LCD screen image will be blackish or saturated (whitish).

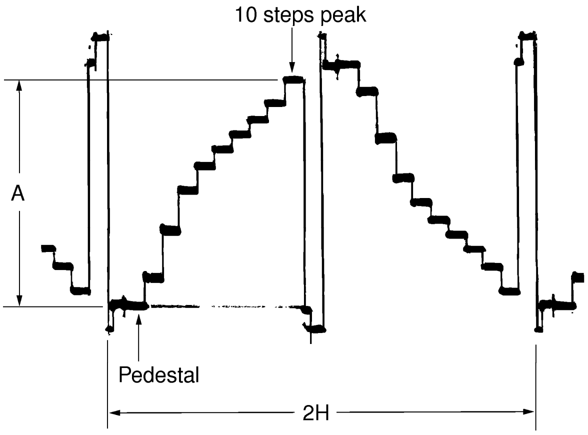
Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN401 (VG) External trigger: Pin ⑧ of CN401 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D4
Specified Value	A = 2.35 ± 0.07 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	03	
3	D	D4		Change the data and set the voltage (A) to the specified value.
4	D	D4		Press PAUSE button.
5	D	D4		Read the data and this data is named Dref.
6	D	CF	Dref	Press PAUSE button.
7	D	DF	Dref	Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	



A: Between the pedestal and 10 steps peak

Fig. 5-1-22

7. Color Adjustment (SY-68 Board)

Set the color saturation to the standard value.
If, deviated, the color will be dark or light.

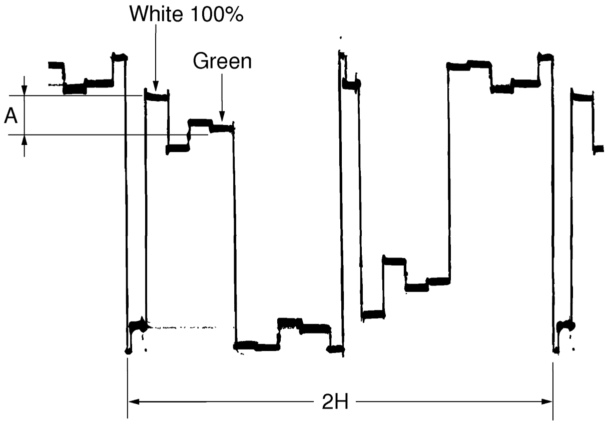
Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN401 (VG) External trigger: Pin ⑧ of CN401 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D1
Specified Value	A = 348 ± 50 mVp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
3	D	D1		Change the data and set the voltage (A) to the specified value.
4	D	D1		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	



A: Between the white 100% (Reference level) and green

Fig. 5-1-23

8. V-COM Level Adjustment (SY-68 Board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑧ of CN401 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D6
Specified Value	A = 5.42 ± 0.05 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	D	D6		Change the data and set the VCOM signal level (A) to the specified value.
3	D	D6		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	01	00	

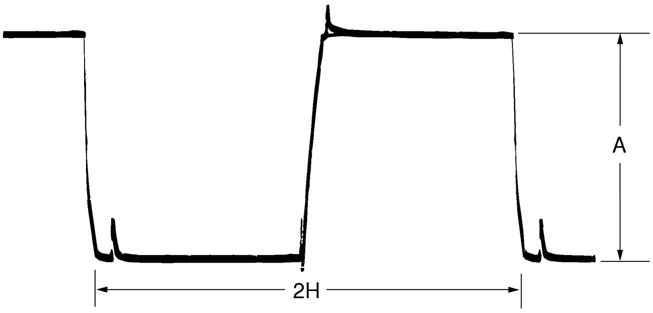


Fig. 5-1-24

9. V-COM Adjustment (SY-68 Board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will be move, producing flicker and conspicuous vertical lines.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on the LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D8
Specified Value	The brightness difference between the section-A and section-B is minimum

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	01	
3	4	10	02	
4	D	D8		Change the data so that the brightness of the section A and section B is equal.
5	D	D8		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	4	10	00	
3	0	01	00	

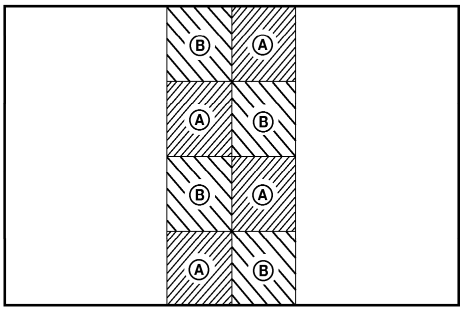


Fig. 5-1-25

10. White Balance Adjustment (SY-68 Board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on the LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D2, D3
Specified Value	LCD screen must not be colored

Note: Check the white balance only when replacing the following parts.
If necessary, adjust them.

1. LCD panel
2. Light induction plate
3. IC802

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	02	
3	D	D2 D3	99 75	Press PAUSE button. (Initial value) (Note 2)
4				Check that the LCD screen is not colored. If not colored, proceed to "Processing after Completing Adjustments".
5	D	D2 D3		Change the data and so that the LCD screen is not colored. (Note 2)

Note 2: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

5-2. SERVICE MODE

2-1. ADJUSTING REMOTE COMMANDER

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Used the Adjusting Remote Commander

1) Connect the adjusting remote commander to the CN401 on the SY-68 board via CPC-9 jig (J-6082-393-C).
2) Adjust the HOLD switch of the adjusting remote commander to “HOLD” (SERVICE position).
3) Turn on the power with the POWER switch of the unit.

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 5-2-1.

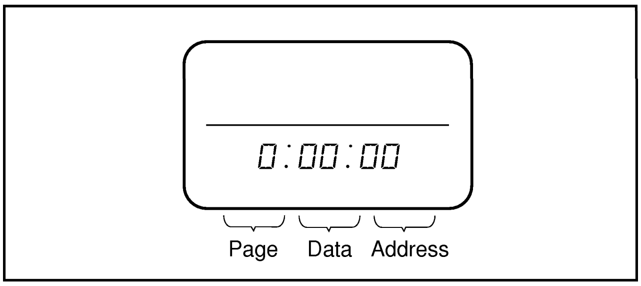


Fig. 5-2-1

4) Operate the adjusting remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH + button is pressed, and decreases when the EDIT SEARCH – button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 5-2-1

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (▶▶) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data in the nonvolatile memory. (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed)

2. Precautions upon Using the Adjusting Remote Commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

2-2. DATA PROCESS

The calculation of the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 5-2-2. indicates the hexadecimal notation- the decimal notation, calculation table.

Hexadecimal nontation-Decimal notation

②
↓

The lower digits of the hexadecimal notation \ The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→ B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note : ( ) indicate the adjusting remote control unit display.

(Example) In the case that the adjusting remote control unit display are BD (bd).
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the① and ② in the above table is the decimal notation to be calculated.

Table 5-2-2

2-3. SERVICE MODE

1. Setting the Test Mode

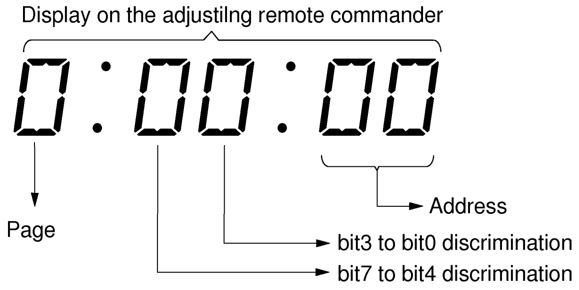
Page D	Address 10

Data	Function
00	Normal
01	Forced CAMERA mode power ON
02	Forced PLAY mode power ON
03	Forced MOVIE mode power ON

- Before setting the data, select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjusting remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to “00”, and press the PAUSE button of the adjusting remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.


Display on the adjustilng remote commander
0:00:00
Address
Page
bit3 to bit0 discrimination
bit7 to bit4 discrimination

	Display on the Adjusting remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjusting remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Mode Dial Check (1)

Page 2	Address 94

Data	Function
00 to 14	S
15 to 3D	A
3E to 67	M
68 to A0	SCN
A1 to D0	MOVIE
D1 to FF	CAMERA

Using method:

1) Select page: 2, address: 94.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

4. Mode Dial Check (2)

Page 2	Address 80, 86

Address	Bit	Function	When bit value=1	When bit value=0
80	1	PLAY	others	PLAY
86	6	SET UP	others	SET UP

Using method:

1) Select page: 2, address: 80 and 86.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

5. Jog Dial Check

Page 2	Address 84

Using method:

1) Select page: 2, address: 84.
2) Turn down the dial and check that number of units of the data is changed as
   0 → 8 → C → 4 → ....
3) Turn up the dial and check that number of unit of the data is changed as
   0 → 4 → C → 8 → ....

6. Switch Check (1)

Page 2	Address 80

Bit	Function	When bit value=1	When bit value=0
0	POWER SW	OFF	ON
1	PLAY (Mode Dial)	others	PLAY
2			
3	SHUTTR SW (CONTROL SWITCH BLOCK (SHUTTER))	OFF	ON
4	XSHUTTER LOCK SW (CONTROL SWITCH BLOCK (SHUTTER))	OFF	ON

Using method:

1) Select page: 2, address: 80.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

7. Switch Check (2)

Page 2	Address 90 to 93

Using method:

1) Select page: 2, addresses: 90 to 93.
2) By discriminating the dispaly data, the pressed key can be discriminated.

Address	Data						
	00 to 0C	0D to 27	28 to 48	49 to 74	75 to A6	A7 to DD	DE to FF
90 (KEY AD0) (IC402 (82))	CONTROL DOWN (KY-55 board) (S933)	CONTROL UP (KY-55 board) (S933)	MENU (KY-55 board) (S936)				
91 (KEY AD1) (IC402 (83))	CONTROL RIGHT (KY-55 board) (S933)	CONTROL LEFT (KY-55 board) (S933)	CONTROL SET (KY-55 board) (S933)				
92 (KEY AD2) (IC402 (84))	DSPL/LCD ON/OFF (KY-55 board) (S932)	AE LOCK (KY-55 board) (S931)	EXPOSURE (KY-55 board) (S934)	FOCUS (KY-55 board) (S935)	SPOT METER (KY-55 board) (S937)		
93 (KEY AD3) (IC402 (85))	ZOOM (W) (CONTROL SWITCH BLOCK (ZOOM))	ZOOM (T) (CONTROL SWITCH BLOCK (ZOOM))	JOG DIAL (CONTROL SWITCH BLOCK (ZOOM))				

8. LED, LCD Check

Page 2	Address 04	Data 01

Using method:

1) Select page: 2, address: 04, and set data: 01.
2) Check that all LED except for the ACCESS LED are lit and all segments of LCD (display window) are lit.
3) Select page: 2, address: 04, and set data: 00.

9. Self Diagnosis Code

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the “Memory stick”.	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new “Memory Stick”.	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

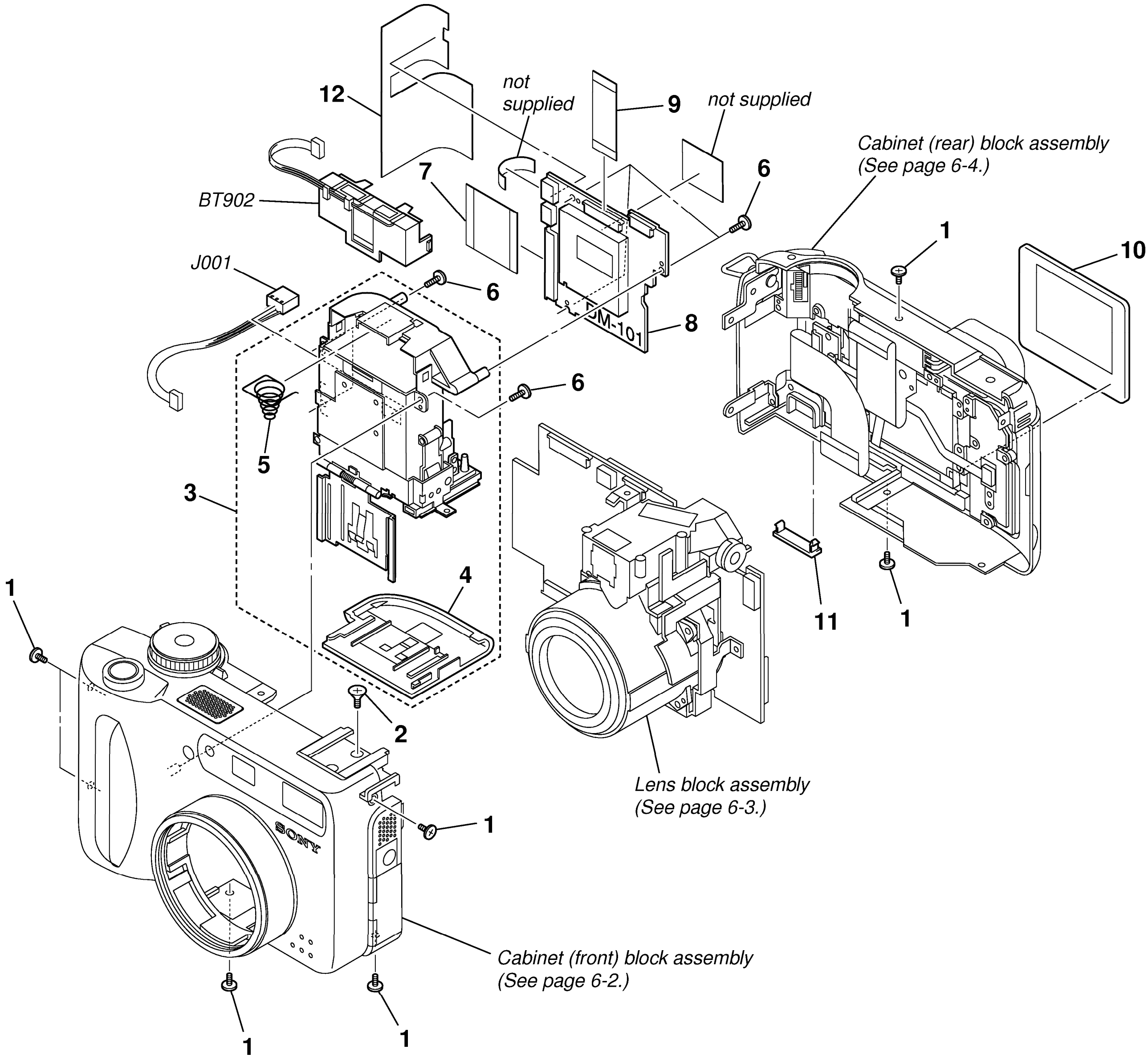
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

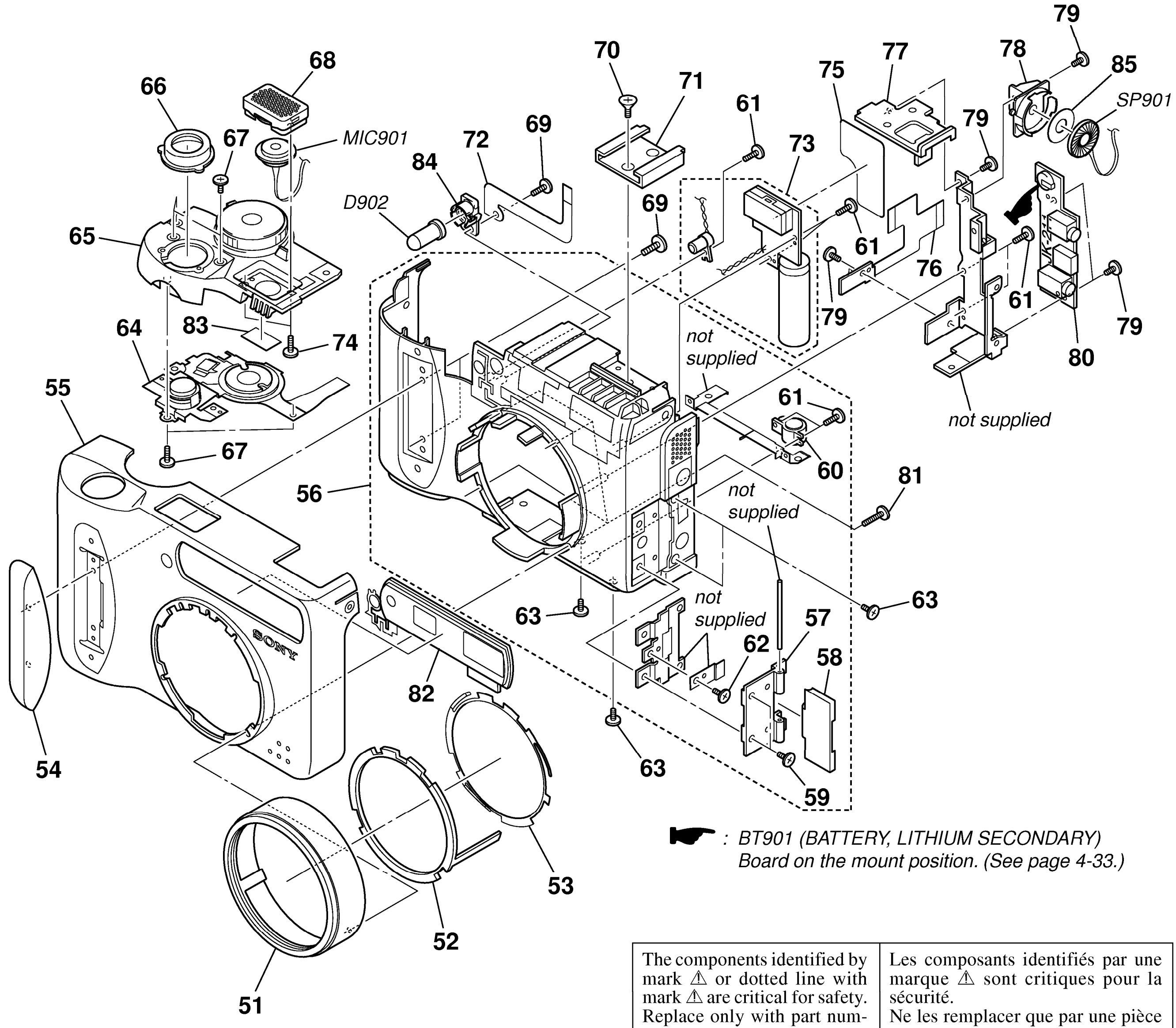
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. MAIN SECTION


12
not supplied
9
not supplied
Cabinet (rear) block assembly
(See page 6-4.)
BT902
7
6
1
10
J001
6
DM-101
8
6
5
3
4
1
2
11
1
Lens block assembly
(See page 6-3.)
1
Cabinet (front) block assembly
(See page 6-2.)
1
1

Ref. No.	Part No.	Description	Remark
1	3-069-158-01	PROCESS, (M2) INTERIOR LOCK	
2	3-069-159-01	PROCESS, (M2) INTERIOR LOCK	
3	X-3951-668-1	HOLDER ASSY, BATTERY	
4	3-068-640-01	LID, BATTERY	
5	3-969-380-01	SPRING, BATTERY	
6	3-713-791-11	SCREW (M1.7X5), TAPPING, P2	
7	1-681-657-11	FP-036 FLEXIBLE BOARD	
8	A-7074-849-A	DM-101 BOARD, COMPLETE	
9	1-681-658-11	FP-037 FLEXIBLE BOARD	
10	3-068-646-01	LCD WINDOW	
11	3-068-652-01	CPC LID	
12	3-068-691-01	TAPE MS	
BT902	1-694-816-11	TERMINAL BOARD, BATTERY	
J001	1-794-045-61	CONNECTOR, DC-IN	

6-1-2. CABINET (FRONT) BLOCK ASSEMBLY

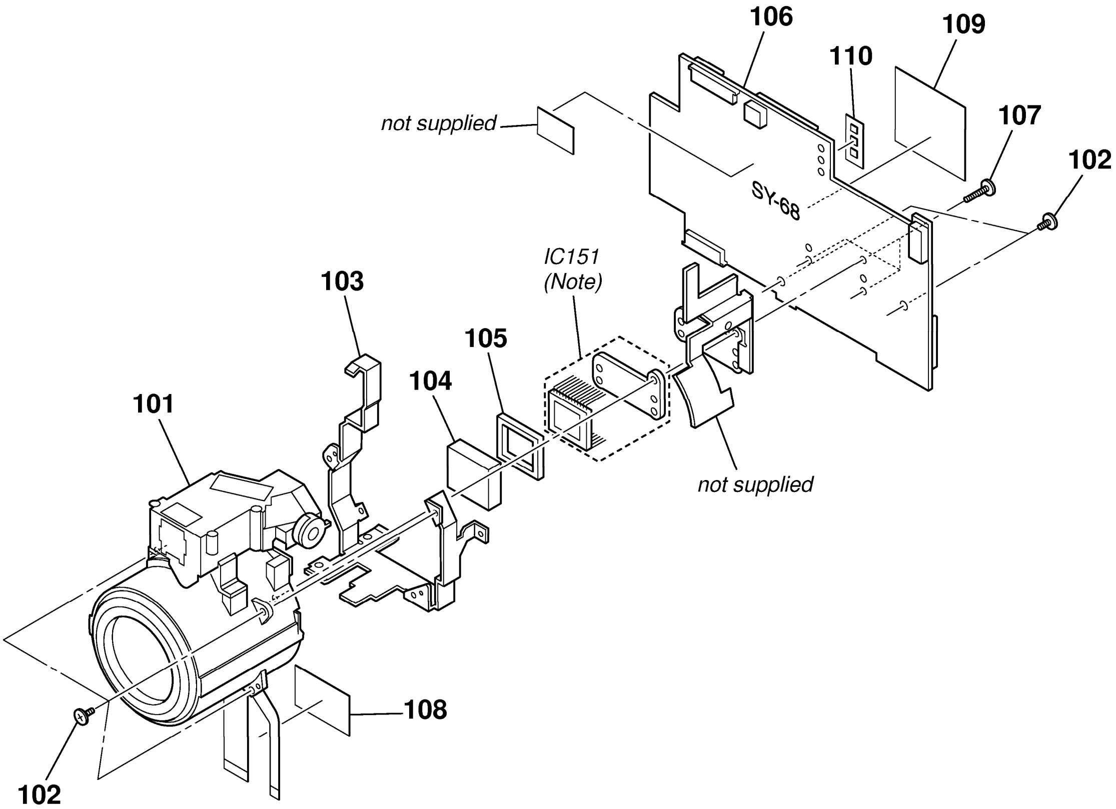

79
68
70
77
78
85
66
71
75
SP901
61
79
67
MIC901
72
69
73
84
D902
69
65
61
76
61
79
79
64
83
74
not supplied
80
55
61
not supplied
67
60
81
56
not supplied
not supplied
63
63
57
62
58
82
54
63
59
53
52
51
SONY

☛ : BT901 (BATTERY, LITHIUM SECONDARY)
Board on the mount position. (See page 4-33.)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	3-068-605-01	SCREW, FILTER	
52	3-068-609-01	RING, SENSOR	
53	3-068-610-01	SPRING, SENSOR	
54	3-068-608-01	GRIP	
55	3-068-603-01	COVER, CABINET (FRONT)	
56	X-3951-665-1	CABINET (FRONT) ASSY	
57	3-068-688-01	RETAINER, COVER SHAFT	
58	3-068-611-01	COVER, JACK	
59	3-968-729-51	SCREW (M2), LOCK ACE, P2	
60	3-060-274-01	SCREW, TRIPOD	
61	3-713-791-11	SCREW (M1.7X5), TAPPING, P2	
62	3-056-233-11	SCREW (M2), LOCK ACE, P2	
63	3-069-158-11	PROCESS, (M2) INTERIOR LOCK	
64	1-476-666-11	SWITCH BLOCK, CONTROL (MODE)	
65	X-3951-667-1	CABINET ASSY, UPPER	
66	3-068-631-01	ESCUTCHEON, RELEASE	
67	3-061-216-01	ACE (M1.7), SPECIAL HEAD LOCK	
68	X-3951-670-1	GRILLE ASSY, MICROPHONE	
69	3-948-339-61	TAPPING	
70	3-069-159-01	PROCESS, (M2) INTERIOR LOCK	
71	3-067-469-11	SHOE, ACCESSORY	
72	1-681-662-11	FP-041 FLEXIBLE BOARD	
⚠73	1-476-673-11	FLASH UNIT	
74	3-713-791-71	SCREW (M1.7X4)	
75	3-068-614-01	ST INSULATING SHEET	
76	1-681-661-21	FP-040 FLEXIBLE BOARD	
77	3-068-659-01	PLATE, SHOE FIXED	
78	3-068-660-01	HOLDER (A), SP	
79	3-056-030-31	ACE (M1.7), 0 PLATE 2 MAIN LOCK	
80	A-7074-850-A	JK-211 BOARD, COMPLETE	
81	3-069-160-01	PROCESS, (M1.7) INTERIOR LOCK	
82	X-3951-666-1	WINDOW ASSY	
83	3-062-299-01	SHEET, MICROPHONE	
84	3-068-693-01	LED HOLDER	
85	3-069-404-01	SPACER, SP	
D902	8-719-084-32	DIODE (LED) TLOH20TP	
MIC901	1-542-428-21	MICROPHONE	
SP901	1-529-857-21	SPEAKER (1.6cm)	

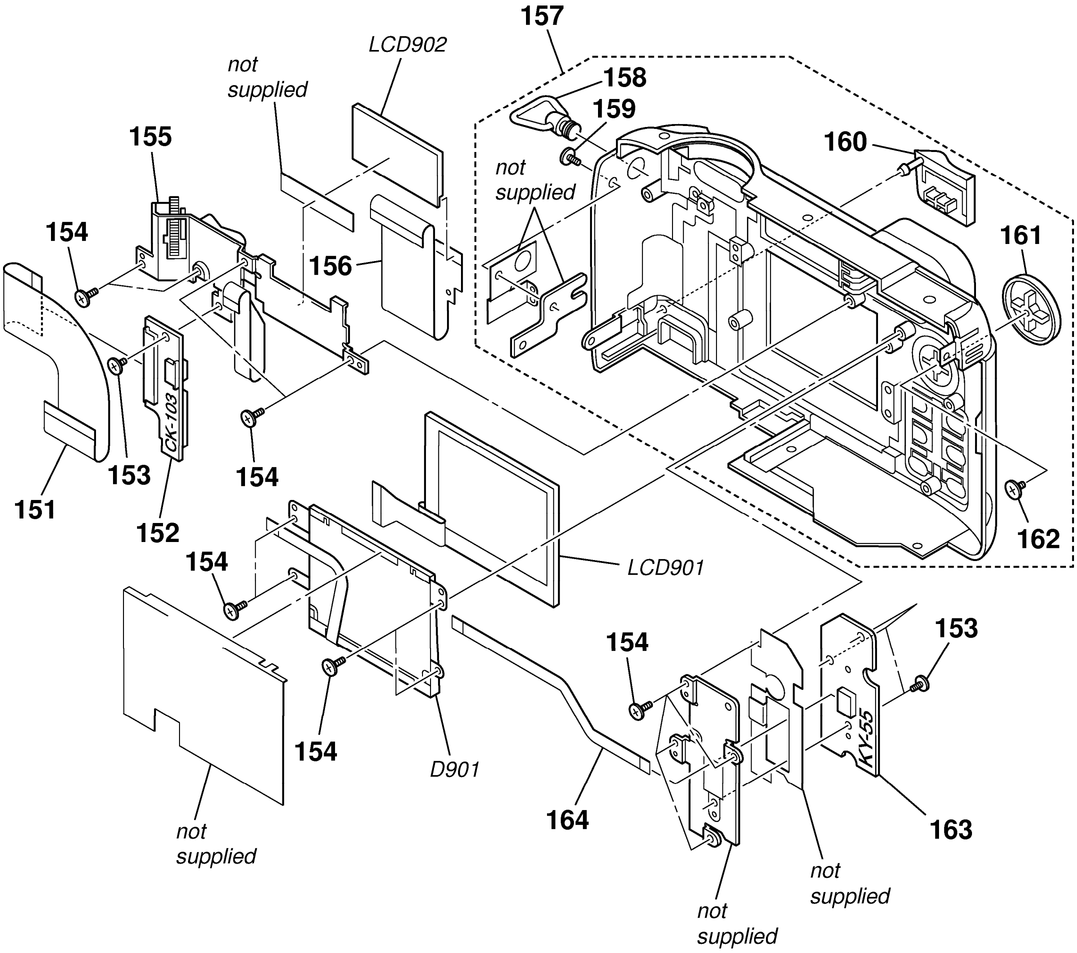
6-1-3. LENS BLOCK ASSEMBLY


106
109
110
107
102
not supplied
SY-68
IC151
(Note)
103
105
104
101
not supplied
108
102

(Note) Be sure to read "Precuations for Replacement of CCD Imager" on page 4-11 when changing the CCD imager.

Ref. No.	Part No.	Description	Remark
101	A-7031-248-A	LENS ASSY	
102	3-056-030-31	ACE (M1.7), 0 PLATE 2 MAIN LOCK	
103	3-068-643-01	FRAME, LENS	
104	1-758-437-11	FILTER BLOCK, OPTICAL	
105	3-067-751-01	RUBBER (N), SEAL	
106	A-7074-888-A	SY-68 BOARD, COMPLETE (SERVICE)	
107	3-318-203-11	SCREW (B1.7X6), TAPPING	
108	3-069-236-01	TAPE (LE)	
109	3-068-601-01	DDC RADIATION SHEET	
110	3-069-176-01	SHEET, LIGHT INTERCEPTION	
IC151	A-7031-268-A	CCD BLOCK ASSY (CCD IMAGER)(Note)	

6-1-4. CABINET (REAR) BLOCK ASSEMBLY


157
158
159
160
161
162
LCD902
not supplied
not supplied
155
154
156
151
153
152
CK-103
154
154
LCD901
154
154
D901
not supplied
164
153
KY-55
163
not supplied
not supplied

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	1-681-659-11	FP-038 FLEXIBLE BOARD	
152	A-7074-852-A	CK-103 BOARD, COMPLETE	
153	3-056-030-31	ACE (M1.7), 0 PLATE 2 MAIN LOCK	
154	3-713-791-71	SCREW (M1.7X4)	
155	1-476-667-11	SWITCH BLOCK, CONTROL (ZOOM)	
156	1-681-822-11	FP-389 FLEXIBLE BOARD	
157	X-3951-671-1	CABINET (REAR) ASSY	
158	3-068-615-01	SHAFT (S), STRAP	
159	3-069-158-11	PROCESS, (M2) INTERIOR LOCK	
160	3-068-654-01	COVER, DC (IN)	
161	3-068-678-01	BUTTON, FUNCTION	
162	3-065-177-01	SCREW (1.7X3)	
163	A-7074-851-A	KY-55 BOARD, COMPLETE	
164	1-681-660-11	FP-039 FLEXIBLE BOARD	
⚠ D901	1-476-708-11	BLOCK, LIGHT GUIDE PLATE (1.8)	
LCD901	1-804-337-21	INDICATOR MODULE, LIQUID CRYSTAL	
LCD902	1-804-377-11	DISPLAY PANEL, LIQUID CRYSTAL (CHARACTER DISPLAY)	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AUS : Australian model
  CN : Chinese model
  CND : Canadian model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korea model
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-7074-852-A	CK-103 BOARD, COMPLETE			
		************************			
		(Ref.No.: 2,000 Series)			
		< CONNECTOR >			
CN961	1-794-766-21	CONNECTOR, FFC/FPC (LIF) 6P			
CN962	1-794-770-21	CONNECTOR, FFC/FPC (LIF) 24P			
CN963	1-815-598-11	CONNECTOR, FFC/FPC (ZIF) 34P			
CN964	1-794-322-11	CONNECTOR, FFC/FPC (ZIF) 6P			
	A-7074-849-A	DM-101 BOARD, COMPLETE			
		************************			
		(Ref.No.: 2,000 Series)			
		< CAPACITOR >			
C001	1-164-880-11	CERAMIC CHIP	180PF	5%	16V
C002	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C003	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C004	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C005	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C008	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C009	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C010	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C011	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C013	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C015	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C018	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C019	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C020	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C021	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C023	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C024	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C025	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C026	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C027	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C028	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C029	1-128-643-11	CERAMIC CHIP	4.7uF (3216)		
C030	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C031	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C032	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C034	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C035	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C036	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C037	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C039	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C040	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C041	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C042	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C043	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C044	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C045	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C046	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C047	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C048	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C049	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C050	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C051	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C053	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C055	1-128-643-11	CERAMIC CHIP	4.7uF (3216)		
C057	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C065	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C068	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C069	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C070	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C753	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
* CN001	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
* CN002	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
CN004	1-774-054-21	CONNECTOR, FFC/FPC (ZIF) 45P			
CN751	1-766-354-21	CONNECTOR, FFC/FPC 24P			
CN752	1-766-340-21	CONNECTOR, FFC/FPC 10P			
CN753	1-815-572-11	CONNECTOR, MEMORY STICK (MS SOCKET)			
CN754	1-766-336-21	CONNECTOR, FFC/FPC 6P			
		< DIODE >			
D001	8-719-075-15	DIODE	MAZT082H08S0		
D002	8-719-158-49	DIODE	MA8120-TX		
D003	8-719-027-76	DIODE	1SS357-TPH3		
D004	8-719-027-76	DIODE	1SS357-TPH3		
D005	8-719-027-77	DIODE	MA796-TX		
D006	8-719-073-01	DIODE	MA111- (K8).S0		
D007	8-719-073-01	DIODE	MA111- (K8).S0		
D008	8-719-058-24	DIODE	RB501V-40TE-17		

DM-101

Ref. No.	Part No.	Description			Remark
D751	8-719-073-01	DIODE MA111- (K8).SO			
D755	8-719-066-44	DIODE CL-270HR-C-TS (ACCESS)			
		< FUSE >			
⚠F001	1-576-406-11	FUSE, MICRO (1608) (1.4A/32V)			
⚠F002	1-576-406-11	FUSE, MICRO (1608) (1.4A/32V)			
⚠F003	1-576-406-11	FUSE, MICRO (1608) (1.4A/32V)			
⚠F004	1-576-406-11	FUSE, MICRO (1608) (1.4A/32V)			
⚠F005	1-576-406-11	FUSE, MICRO (1608) (1.4A/32V)			
		< FERRITE BEAD >			
FB001	1-414-228-11	FERRITE	0uH		
FB002	1-414-228-11	FERRITE	0uH		
		< IC >			
IC001	8-759-491-22	IC MB3825APFV-G-BND-ER			
		< COIL >			
L006	1-416-669-11	INDUCTOR	22uH		
L010	1-412-056-11	INDUCTOR	4.7uH		
L011	1-412-056-11	INDUCTOR	4.7uH		
L012	1-412-056-11	INDUCTOR	4.7uH		
L013	1-412-056-11	INDUCTOR	4.7uH		
L014	1-412-056-11	INDUCTOR	4.7uH		
L015	1-416-669-11	INDUCTOR	22uH		
L016	1-412-056-11	INDUCTOR	4.7uH		
L017	1-414-406-41	INDUCTOR	220uH		
L018	1-419-387-11	INDUCTOR	100uH		
L019	1-216-296-11	SHORT	0 (Note)		
		< LINE FILTER >			
LF001	1-411-957-11	FILTER, COMMON MODE			
		< TRANSISTOR >			
Q001	8-729-047-68	TRANSISTOR	SSM3K03FE (TPL3)		
Q002	8-729-051-49	TRANSISTOR	TPC8305 (TE12L)		
Q003	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q004	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO		
Q005	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q006	8-729-033-14	TRANSISTOR	FP107-TL		
Q007	8-729-033-14	TRANSISTOR	FP107-TL		
Q008	8-729-043-60	TRANSISTOR	CPH6102-TL		
Q009	8-729-033-14	TRANSISTOR	FP107-TL		
Q011	8-729-033-14	TRANSISTOR	FP107-TL		
Q012	8-729-044-58	TRANSISTOR	SI2304DS-T1		
Q014	8-729-042-26	TRANSISTOR	2SB1462J-QR (K8).SO		
Q067	8-729-053-54	TRANSISTOR	N1A01FE-Y/GR (TPLR3)		
Q070	8-729-053-54	TRANSISTOR	N1A01FE-Y/GR (TPLR3)		
Q073	8-729-053-52	TRANSISTOR	N1C01FE-Y/GR (TPLR3)		
Q076	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO		
		< RESISTOR >			
R001	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R003	1-208-920-81	METAL CHIP	24K	0.5%	1/16W
R004	1-218-971-11	RES-CHIP	33K	5%	1/16W
R005	1-218-979-11	RES-CHIP	150K	5%	1/16W
R007	1-216-295-11	SHORT	0		
R008	1-218-953-11	RES-CHIP	1K	5%	1/16W
R009	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R010	1-218-973-11	RES-CHIP	47K	5%	1/16W
R011	1-218-971-11	RES-CHIP	33K	5%	1/16W
R012	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W
R013	1-218-969-11	RES-CHIP	22K	5%	1/16W
R014	1-218-985-11	RES-CHIP	470K	5%	1/16W
R015	1-218-989-11	RES-CHIP	1M	5%	1/16W
R016	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R017	1-218-966-11	RES-CHIP	12K	5%	1/16W
R018	1-216-150-91	RES-CHIP	10	5%	1/8W
R019	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R020	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R021	1-208-701-11	METAL CHIP	5.6K	0.5%	1/16W
R022	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R023	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R024	1-218-953-11	RES-CHIP	1K	5%	1/16W
R025	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R026	1-218-990-11	SHORT	0		
R027	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R028	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R029	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R030	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R031	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R032	1-218-965-11	RES-CHIP	10K	5%	1/16W
R033	1-218-958-11	METAL CHIP	2.7K	0.5%	1/16W
R034	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R035	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R036	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R037	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R038	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R040	1-218-971-11	RES-CHIP	33K	5%	1/16W
R041	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R042	1-218-971-11	RES-CHIP	33K	5%	1/16W
R043	1-218-990-11	SHORT	0		
R044	1-218-990-11	SHORT	0		
R045	1-218-990-11	SHORT	0		
R046	1-218-971-11	RES-CHIP	33K	5%	1/16W
R047	1-218-969-11	RES-CHIP	22K	5%	1/16W
R048	1-218-990-11	SHORT	0		
R049	1-218-990-11	SHORT	0		
R050	1-218-990-11	SHORT	0		
R051	1-218-969-11	RES-CHIP	22K	5%	1/16W
R052	1-218-971-11	RES-CHIP	33K	5%	1/16W
R053	1-218-969-11	RES-CHIP	22K	5%	1/16W
R054	1-218-977-11	RES-CHIP	100K	5%	1/16W
R055	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R056	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R057	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R058	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R059	1-218-990-11	SHORT	0		
R071	1-218-967-11	RES-CHIP	15K	5%	1/16W
R072	1-218-977-11	RES-CHIP	100K	5%	1/16W
R074	1-208-933-11	METAL CHIP	82K	0.5%	1/16W
R076	1-218-977-11	RES-CHIP	100K	5%	1/16W
R077	1-218-977-11	RES-CHIP	100K	5%	1/16W
R082	1-218-965-11	RES-CHIP	10K	5%	1/16W
R084	1-208-931-11	METAL CHIP	68K	0.5%	1/16W

Note: Resistor is mounted to the location where L019 is printed.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
R085	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R086	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R087	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R088	1-208-689-11	METAL CHIP	1.8K	0.5%	1/16W
R089	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R751	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R752	1-218-945-11	RES-CHIP	220	5%	1/16W
R753	1-218-990-11	SHORT	0		
		< TRANSFORMER >			
⚠T001	1-429-565-21	TRANSFORMER, CONVERTER			

Ref. No.	Part No.	Description			Remark
		< LINE FILTER >			
LF901	1-419-100-21	COIL, COMMON-MODE CHOKE			
		< RESISTOR >			
R901	1-218-979-11	RES-CHIP	150K	5%	1/16W
R902	1-218-985-11	RES-CHIP	470K	5%	1/16W
R903	1-218-953-11	RES-CHIP	1K	5%	1/16W
R904	1-218-977-11	RES-CHIP	100K	5%	1/16W
R905	1-216-013-00	METAL CHIP	33	5%	1/10W
R906	1-216-295-11	SHORT	0		
R908	1-216-295-11	SHORT	0		

A-7074-850-A JK-211 BOARD, COMPLETE
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(Ref.No.: 2,000 Series)

Ref. No.	Part No.	Description			Remark
		< BATTERY >			
BT901	1-756-191-11	BATTERY, LITHIUM (SECONDARY)			
		< CAPACITOR >			
C901	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C903	1-216-864-91	SHORT	0 (Note)		
		< CONNECTOR >			
CN901	1-766-348-21	CONNECTOR, FFC/FPC 18P			
CN902	1-794-962-11	CONNECTOR, SQUARE TYPE (USB 5P) (USB)			
		< DIODE >			
D901	8-719-075-15	DIODE MAZT082H08S0			
D902	8-719-075-15	DIODE MAZT082H08S0			
D903	8-719-075-15	DIODE MAZT082H08S0			
D904	8-719-075-15	DIODE MAZT082H08S0			
D905	8-719-075-15	DIODE MAZT082H08S0			
D907	8-719-075-15	DIODE MAZT082H08S0			
D908	8-719-075-15	DIODE MAZT082H08S0			
D909	8-719-075-15	DIODE MAZT082H08S0			
D910	8-719-075-15	DIODE MAZT082H08S0			
D911	8-719-073-01	DIODE MA111- (K8).S0			
D912	8-719-073-01	DIODE MA111- (K8).S0			
		< FERRITE BEAD >			
FB901	1-216-864-91	SHORT	0 (Note)		
FB902	1-469-324-21	FERRITE	0uH		
FB903	1-469-179-21	FERRITE	0uH		
FB904	1-469-179-21	FERRITE	0uH		
FB905	1-469-179-21	FERRITE	0uH		
FB906	1-469-179-21	FERRITE	0uH		
FB907	1-469-324-21	FERRITE	0uH		
FB908	1-500-284-21	FERRITE	0uH		
FB909	1-500-284-21	FERRITE	0uH		
		< JACK >			
J901	1-793-995-21	JACK, SUPER SMALL TYPE (ACC)			
J902	1-569-950-31	JACK (SMALL TYPE) (A/V OUT)			

A-7074-851-A KY-55 BOARD, COMPLETE
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(Ref.No.: 2,000 Series)

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN931	1-815-597-11	CONNECTOR, FFC (ZIF) 6P			
		< DIODE >			
D931	8-719-073-01	DIODE MA111- (K8).S0			
D932	8-719-075-15	DIODE MAZT082H08S0			
D933	8-719-075-15	DIODE MAZT082H08S0			
D934	8-719-075-15	DIODE MAZT082H08S0			
		< RESISTOR >			
R931	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R932	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R933	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R934	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R935	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R936	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R937	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R938	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
		< SWITCH >			
S931	1-771-138-82	SWITCH, KEY BOARD (AE LOCK)			
S932	1-771-138-82	SWITCH, KEY BOARD (DSPL/LCD ON/OFF)			
S933	1-786-039-21	SWITCH, TACTILE (CONTROL)			
S934	1-771-138-82	SWITCH, KEY BOARD (+/–)			
S935	1-771-138-82	SWITCH, KEY BOARD (AF/MF)			
S936	1-771-138-82	SWITCH, KEY BOARD (MENU)			
S937	1-771-138-82	SWITCH, KEY BOARD ([●])			

Electrical parts list of the SY-68 board is not shown.
Pages 6-8 to 6-13 are not shown.

Note: Resistor is mounted to the location where C903 and FB901 are printed.

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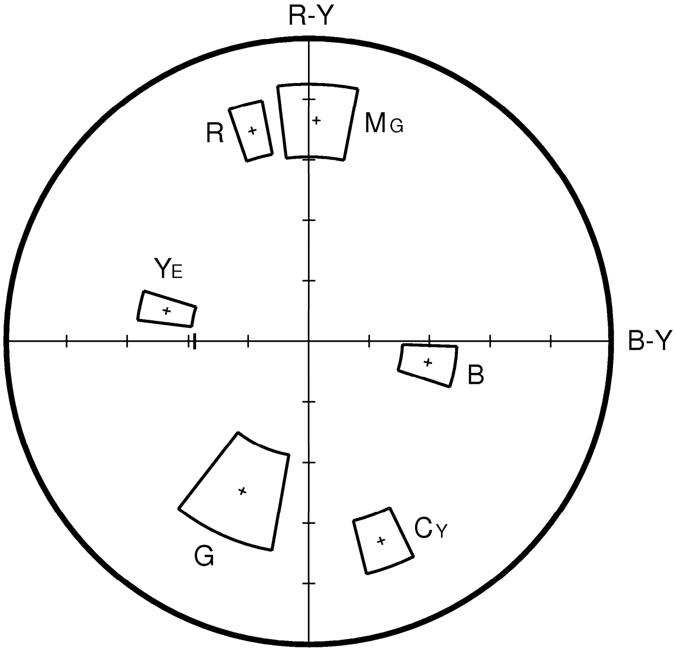
Ref. No.	Part No.	Description	Remark
		ACCESSORIES *************	
⚠	1-475-599-11	ADAPTOR, AC (AC-L10) (EXCEPT CN, KR)	
⚠	1-475-599-71	ADAPTOR, AC (AC-L10) (KR)	
⚠	1-475-599-81	ADAPTOR, AC (AC-L10) (CN)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (E, JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (E)	
⚠	1-696-819-11	CORD, POWER (AUS)	
	1-757-293-11	CORD, CONNECTION (USB 5P)	
⚠	1-769-608-11	CORD, POWER (AEP, E)	
⚠	1-776-985-11	CORD, POWER (KR)	
⚠	1-782-476-11	CORD, POWER (CN)	
⚠	1-783-374-11	CORD, POWER (UK, HK)	
	1-783-738-31	CORD, CONNECTION (AV CONNECTING 1.5m)	
⚠	1-790-073-11	CORD, POWER 2P (JE)	
⚠	1-790-107-22	CORD, POWER (US, CND)	
⚠	1-790-732-11	CORD, POWER (J)	
	3-065-665-01	MANUAL, INSTRUCTION (for SAFETY) (JAPANESE) (J)	
	3-066-676-01	SPVD-004 (P) (CD-ROM) (EXCEPT US, CND, J)	
	3-066-677-01	SPVD-004 (I) (CD-ROM) (US, CND, J)	
	3-067-652-01	REGISTRATION (CD-ROM) (J)	
	3-067-797-01	STRING (T), CAP	
	3-068-121-01	CLUB (J), PICTURE PARADISE (CD-ROM) (J)	
	3-068-187-01	MANUAL, INSTRUCTION (JAPANESE) (J)	
	3-068-187-11	MANUAL, INSTRUCTION (ENGLISH) (US, CND, AEP, UK, E, AUS, CN, HK, JE)	
	3-068-187-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (CND, AEP, JE)	
	3-068-187-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E, JE)	
	3-068-187-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN) (AEP)	
	3-068-187-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE, SIMPLIFIED CHINESE) (E, CN, HK, JE)	
	3-068-187-61	MANUAL, INSTRUCTION (SWEDISH, RUSSIAN) (AEP, JE)	
	3-068-187-71	MANUAL, INSTRUCTION (ARABIC) (E)	
	3-068-187-81	MANUAL, INSTRUCTION (KOREAN) (KR, JE)	
	3-068-191-01	PC INSTRUCTION MANUAL (JAPANESE) (J)	
	3-987-015-01	BELT (S), SHOULDER	
	X-3951-672-1	CAP ASSY, LENS	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For NTSC mode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